

NOTES1. AERIAL/COMMUNITY SERVICES

- * Will aerial service be economical compared to other means of transport and communication.
 - * Is there any other service in existence at all.
 - * Is it easier to set up aerial service compared to other means of service.
 - * Will it be quicker if aerial service is adopted.
 - * Do the geographical and topographical features pre-eminently make aerial service more suitable compared to any other.
 - * What infrastructureal facilities need to be set up afresh ; what facilities, already in existence, can be used straightaway and what with some augmentation?
-
- * What is the overall investment requirement for the aircraft/ Helicopter fleet and what for the ground segment.
 - * What community service is being planned to be met through aerial means.

2. SERVICES UNDER CONSIDERATION

HEALTH SERVICES :

- Preventive - diseases (immunization, mother care, infant care, epidemics)
- Accident cases.
- Various casualties
- Inaccessible or scattered areas without proper hospital or dispensing units.

POLICING DUTIES

- Accident spotting
- Crowds & Rioting scenario reporting
- Fast despatching of policing personnel. to trouble spots.
- Traffic control & regulation.
- Criminal investigation, (smuggling, border infringements, dacoites etc. Drug Traffic, etc)

EMERGENCIES, CATASTROPHIES

- Flooded areas
- Drought areas - water bombing
- Land slides
- Cyclonic conditions
- Fires

FORESTRY & ECOLOGICAL APPLICATIONS

- Forest seeding
- Timber and woods monitoring
- Valleys and river beds
- Mountain sides

AGRICULTURAL SERVICES

- Seeding
- Spraying - pesticides
- Watering
- Fertilising

3. CARRIAGE AND COMMUNICATION SERVICES

- Postal - Mail
- Passenger
- Cargo
- Packets
- Perishable goods
- Medicines (Drugs - emergency)
- Veterinary service ??

THIRD & FOURTH LEVEL AERIAL OPERATIONS

Vayudoot services - are they adequate ?

What improvements considered necessary ?

What type of aircraft suitable ?

- Aerial taxis to tourist spots.
-

4.

Q Can a single aircraft be developed to meet various services visualised?

Q If a single aircraft cannot meet all the services, which high priority services can be met through a single aircraft specification?

Q If a single airframe can meet many high priority services, what internal system, furnishing and other fitment changes considered necessary to fit the aircraft to the role ?

5. AIRCRAFT DESIGN CONSIDERATIONS

- * Easily developed
 - * If higher technology results in an economical design overall, by no means should high technology be overlooked.
 - * As far as possible large numbers should be derived for economy of production.
 - * Determine speed, range, size, volume, passenger seating capacity etc on the basis of service being planned to be executed.
 - * Essential systems and equipment as a universal fit should be determined.
 - * Role based equipment and system to be defined for individual user service.
 - * Take-off & landing specifications of the aircraft to be mutually compatible with those available with existing runways, airstrips and airports.
-
- * Ground facilities, new runways and airstrips to be defined if newer localities are to be opened up. Landing and Take off capabilities mutually compatible.
 - * Any other infrastructural facility demand to be visualized and defined.

6. DETAILED DESIGN SPECIFICATIONS

In order to define more specifically the design of the aircraft, it would be necessary to make some assumptions which will need to be substantial later or amended in the light of superior information becoming available.

ASSUMPTIONS

GENERAL

- Karnataka state to be model for aerial service activity elsewhere in the country.
- City, Town, village and community grouping to be taken as the social base which will either take or give the necessary service to any of the other constituents.
- Aircraft will be based primarily in a city or Town where maintenance and servicing facility could be organised somewhat more readily. Facility interlinking could also be considered if found feasible or economical.

ASSUMPTIONS SPECIFIC TO DESIGN

DISTANCES AND TIMES

- Distances between cities and towns or between towns and villages could be around 100 to 150 km and between 50 to 100 km respectively, looking at it another way, range could be as high as 300 km, allowing for fuel reserves, alternative landing strip etc. aircraft could be designed to cater for 500 km range. Similarly time is another significant factor which should be defined.
- Door to door time for meeting emergencies, crisis etc. should not be greater than 1/2 hr from the time the message is received.
- For more routine health immunization and preventive disease programmes, this time.

7.

- Could be relaxed to say 45 minutes.
- Helicopter and fixed wing aircraft to be categorised suitably so that door to door time could be compatible in both cases as reduced ground time invariably goes with the rotary wing vehicle.
- Since time is to be derived from the speed of the aircraft and economy is also to be derived from the speed, a more rigorous with time to be solved but broadly speaking ground speed could be between 150 to 500 km/hr for the fixed wing and 25 to 300 km/hr for the rotary wing aircraft.

OTHER ASSUMPTIONS

- Taking safety to be the overriding feature of this communal aerial service, twin engine configuration should have the priority over single engine types.
- Pressurization will be success particularly for health service activity, taxi-tourist service for seasonal low level disturban avoidance etc.
- Air conditioning ?? climatically extreme variations therefore it will be preferable to provide the airconditioning system.
- Aircraft earmarked for health services should have besides the pilot, accommodation for
 1. Doctor (1)
 2. Nurse (1)
 3. Attendants (2)
 4. Stretcher
 5. Patient (1)
 6. Medicine Boxes
 7. Surgical Boxes
 7. Other amenities.

8.

OTHER ASSUMPTIONS

In general :

Wing loading	35 to, 40 lbs/ft ₂
Power loading	7 to 7.5 lbs/SHP
Stalling speed flaps up	140 to 145 km/hr

T O Distance to 15 M	2500 ft or 800 M
----------------------	------------------

Landing distance to 15 M nonreversing stop.	1800 ft or 600 M
--	------------------

Landing distance to 15 M with reversing stop.	1000 ft or 330 M
--	------------------

Maximum wt. of aircraft around 9500 lbs