



AIRLIFT DURING DISASTERS: THE UTTARAKHAND EXPERIENCE

Can we Save More Lives?

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“For India to be better prepared to meet disasters, it needs to levitate into becoming another kind of country.”

-Santosh Desai¹

A Time to Introspect *nay*, Act

The recent cloudbursts, incessant rain, flash floods and landslides in Uttarakhand left death and destruction in their wake. What appeared to be the first monsoon rains turned devastating. The armed forces and the para-military forces were called in to provide succour. Within the first ten days, the Indian Air Force (Operation Rahat) airlifted over 13,000 people and dropped over 2,00,000 kgs of relief material in more than 1,500 airlift sorties.¹ The rescue work continued unabated despite the crash of a Mi-17V5 helicopter killing all 20 on board. The Indian Army (Operation Surya Hope) saved over 2,700 pilgrims in over 600 sorties in the same period.²

Constrained by terrain and weather, these were helicopter intensive operations. C-130J Super Hercules aircraft were however innovatively used to form an aviation fuel supply bridge to Dharasu ALG. They emptied aviation fuel into a bowser thereby giving boost to the helicopter operations in the region. The bowser itself had been airlifted to the ALG by a Mi-26 heavy-lift helicopter. On the return leg the C-130J airlifted the injured and the stranded pilgrims.³ AN-32s also airlifted paratroopers, bridging equipment, disaster management communication vehicles, medical teams and more aviation fuel.⁴ It was a well co-ordinated effort; the media dubbed it as “IAF’s biggest ever helicopter based rescue operation in history”.⁵ Despite prompt airlift, over 1,000 people are reported dead. As on July 1, 2013, at least 1500 people were stranded and 3,000 were reported missing, and rescue operations were still *on*. Fear of outbreak of epidemic loomed large.⁶

India has been visited by disasters year after year. In some instances the number of dead and the missing has equalled, or even exceeded, the number of rescued

people. Looking back, a few questions nudge one out of one’s reverie, into introspection: Can such crises be managed any better? Can more lives be saved? How? Can airlift be made more effective? This was a natural disaster; is the preparation adequate to address a Fukushima Daiichi like disaster or even a repeat of the Bhopal Gas Tragedy?

Uttarakhand is still fresh in the memory. There is a need to distil and capture the lessons, not as brand new ideas but as a guide to organise and make sense of the resources and effort put into exercises of this magnitude. There are some areas, which can be worked upon and fine-tuned.

At the Core of Rescue & Relief Operations

Be it a natural disaster, or a manmade one like the Bhopal Gas Tragedy (1984), or even a disaster like the Fukushima Nuclear Disaster (2011) triggered by a natural calamity, the focus of relief and rescue operations remains practically the same, with minor differences to suit specific needs. The focus can be summarised thus: –

- To position rescue teams with medical aid within the *golden hour*⁷
- To supply food, water and other necessities to the affected people
- To evacuate people to the nearest safe haven expeditiously
- To check/ mitigate the effect of the disaster while rescue and evacuation process is *on* (in situations like Bhopal and Fukushima)

Airlift is the best means of reaching out to the needy. A sound airlift capability and a formidable capacity to supply/ evacuate the affected is essential for an effective relief operation.

Accessibility with Speed & Tonnage: The Essence of Relief Operations

In disaster relief operations *speed* is of essence – the success depends on the ability of the rescue organisations to move

large numbers of men and tonnes of material most expeditiously to locations where they are required. Often, the disaster sites become inaccessible by surface means. Or, in case of manmade disasters, the environment could become hazardous, deterring the rescuers from approaching the distressed. Besides, even if they are approachable, the long time taken to reach the location by surface means may jeopardise the safety of the stranded population.

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Minimising Turnaround Time

A large fleet of transport aircraft is most desirable for effectiveness of airlifts. It is possible however, to offset the inadequacies of numbers (to a small extent, though) by ensuring that all the available airworthy aircraft remain airborne as long as possible and the turnaround time on the ground is minimum. Mechanical/ powered means take much less time for loading/ offloading. Wherever possible, bases could be equipped with facilities that reduce manual handling of loads to the minimum. At remote locations where heavy material handling equipment (MHE) cannot be positioned, innovative means could be employed to minimise turnaround time. When faced with the paucity of MHE in the China-Burma-India Sector (1942-45), the Allied Forces had used elephants for loading aircraft.⁸

Relief Material: Some difficult Choices

The quantities, and the quality, of supplies airlifted are of grave concern. Every kilogram of material that is airlifted must be useable at the receiving end. Nearly 65% of the Berlin Airlift was devoted to carrying charcoal needed critically for cooking and heating the houses in the bitter winter. To reduce the consumption of charcoal, practical foodstuff that required less cooking was given preference over others that required more charcoal for cooking.⁹

In the present context, some sorties were devoted to airlifting firewood for cremation at a time when there were many survivors still awaiting relief supplies pending

evacuation. The choice between airlifting 'firewood for cremation' and supplying 'water, food and medicines to the survivors' poses a dilemma, particularly when one is at the cost of the other. If the people struggling for survival deserve critical supplies, the dead too deserve a respectable cremation/ burial.

This issue deserves a carefully balanced study.

Visits during Relief Operations: Gnawing at Meagre Resources

Technology has made it possible for a VIP sitting in Delhi, to witness the operations on a computer screen in real time. Therefore, such visits could be deferred till relief operations stabilise and may be undertaken provided they do not impede operations.

In the early stages of the relief operations, the media reported visits by VIPs to relief camps; much of it was with adverse connotations. Many of them viewed the use of resources for the security/ administrative arrangements for their visits as a drain on the resources meant for relief

operations. The Home Minister even urged the leaders to avoid visiting the camps. Visits of military leadership, on the other hand, are operational necessities – a must (anytime, anywhere).

Technology has made it possible for a VIP sitting in Delhi, to witness the operations on a computer screen in *real time*. Therefore, such visits could be deferred till relief operations stabilise and may be undertaken provided they do not impede operations. Further, a deliberate *degree of informality* can make a difference. A dignitary could go through a visit unobtrusively in routine airlift sorties. The following anecdote highlights the spirit in which such visits need to be taken:

"Such was the appeal of the Berlin Airlift that many VIPs visited to see the activity – so strongly did it capture the imagination of the free world, that we were being visited by national leaders, military men, and well-known journalists from many countries. They all had to put up with a degree of informality. In the very first few days, a party of VIPs bound from Berlin in C-47 landed at Wisbaden for lunch. When they came back to their plane they found it loaded with flour."

–Lieutenant General William H Tunner¹⁰

Expanding the Horizon

Conventionally, fixed/ rotary wing aircraft have been used as airlifters during disasters. Could airships be effective in this role? *Skylifter*, an Australian firm, is developing an airship that will carry up to 150 tonnes over 1000 kms. The firm claims that once developed, the airship will carry

rural hospitals and disaster relief centres to remote areas.¹¹

Consider this: Airlift platforms (airships included) are all mere means to an end. Their effectiveness depends on their intelligent

exploitation. Helicopters were deployed to douse the meltdown in the reactors when an earthquake and tsunami struck Japan's Fukushima Daiichi nuclear power station (2011). Radioactive contamination from the plant forced the evacuation of people up to 30 kms away and affected up to 100,000 residents. Helicopters used in the operation could carry small payload, about 2.5 tonnes, which had very little effect on the blaze. Their *bellies* were coated with lead to lessen the effect of nuclear radiation. This lowered their capacity to carry water. Pilots who flew those sorties did so at the peril of their lives. A pilotless airship (which may be a possibility in the *not-too-distant* future) with a capacity of 60 to 70 tonnes, would have achieved more tangible results – no risk to lives; much larger quantity of water delivered in every lift. Besides, airships could have effected evacuation of larger numbers of people. Similarly, an airship could have carried hundreds of residents upwind and saved them from the poisonous gases emanating from the Union Carbide pesticide plant in Bhopal (1984). Investment in research and development of lighter-than-air aircraft and robotic airlift technology may be a logical step forward.

Learning from History

India's past is a repository of valuable experience in airlift during disasters. A re-look into it can give valuable insights. Besides our own experience, two historical airlifts that have a lot in common with our environment are: firstly, the Allied airlift of supplies to a beleaguered people in Berlin (1948-49) and secondly, the airlift *over the hump* in inclement weather over mountainous and jungle terrain (1942-45) – a study of these airlifts may be of immense value. Study of relatively recent airlifts by the US and the NATO forces in Iraq and Afghanistan with state of the art assets in a much different environment may be of less relevance.

Augmenting the Airlift Capacity

Even a very large fleet of transport aircraft may not be a guarantee against disasters of all magnitudes. Situations do arise wherein the available strength falls short of the requirement. As of now civilian aircraft are requisitioned during crisis

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situations. But the existing system is loosely organised – there is no *commitment* on the part of the airlines. The crew are not duty-bound to fly in hazardous conditions or through a hostile airspace. At

the outbreak of the Gulf War (1990), Air India crew had threatened to ground their fleet when a set of their crew was stranded in Kuwait even as Indian expatriates awaited airlift out of the war-torn region.¹²

The US too, despite its formidable airlift capacity, faces shortage of aircraft and resorts to augmentation. They have a formalised system of augmenting the national airlift capacity in times of crises. The US Civil Reserve Air Fleet (CRAF) supports its Department of Defense (DOD) airlift requirements in emergencies when the need for airlift exceeds the capability of the military fleet.¹³ All CRAF participants are U.S. carriers certified by the Federal Aviation Administration. The commercial airlines contractually pledge aircraft to the various segments of CRAF, ready for activation when needed. To provide incentives for civil carriers to commit aircraft to the CRAF program and to assure the US of adequate airlift reserves, the government makes peacetime airlift business available to civilian airlines that obligate aircraft to the CRAF. It is a symbiotic relationship – CRAF presents benefits and opportunities for both DOD and US airlines. CRAF system, with changes to suit our environment, could be emulated.

Human Resource for Coordinating Airlift

Considering that the armed forces are invariably involved in providing relief when disaster strikes, it would be worthwhile to include serving and retired service personnel in various disaster relief bodies at all levels. Their presence in those organisations will ensure more effective two-way communication and speedier action.

The Path Ahead

Environmentalists have warned that at the existing high rate of deterioration of the environment, natural disasters will strike planet earth more often than in the past. The

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recent disasters are not an aberration, but the beginning of a future in which mega-disasters will be a matter of routine. *Being prepared* is the need of the hour. Towards that end, there is a need to bolster the capacity while augmenting and judiciously exploiting the available resources. Serving and retired armed forces personnel are a formidable human

resource that can be tapped for impetus. Work-studies could be undertaken to fine-tune the working so that airlifts devoted to disaster relief become even more effective. Investment in R&D of *lighter-than-air* aircraft technology may pay dividends.

Notes

¹These figures and others mentioned here may vary from source to source. More authentic data is likely to become public in due course of time.

²"Of winged angels and heroic deeds", *Hindustan Times*, June 27, 2013.

³"C-130J makes Hercules an easy task", *The Times of India*, June 23, 2013.

⁴"A State Robbed and Devastated" *The Times of India*, June 24, 2013.

⁵"Operation Rahat", *The Times of India*, June 24, 2013.

⁶"Uttarakhand: 1500 still stranded in Badrinath, death toll remains unclear", Edited by Amit Chaturvedi | Updated: July 01, 2013 10:16 IST, *NDTV* available at <http://www.ndtv.com/article/cheat-sheet/uttarakhand-1500-still-stranded-in-badrinath-death-toll-remains-unclear-386190> accessed July 01, 2013.

⁷"Golden Hour" is the crucial period of time that rescue teams need to act in order to give the survivors of a crash or a disaster the best chance at survival.

⁸Lieutenant General William H. Tunner USAF, *Over the Hump* (Washington D.C.: Office of Air Force History, US AF, 1985), p.97.

⁹*Ibid.* p. 203.

¹⁰*Ibid.* p. 201.

¹¹"Giant airship that can carry entire buildings 2000 kms," *The Times of India*, October 6, 2010, p. 21.

¹²K. P. Fabian, "Biggest Ever Air Evacuation in History," *ORAL HISTORY, Indian Foreign Affairs Journal*, Vol. 7, No. 1, January-March, 2011, p. 97.

¹³Christopher Bolkcom, "Civil Reserve Air Fleet (CRAF)", *CRS Report for Congress*, Congressional Research Service, at <http://www.fas.org/sgp/crs/weapons/RL33692.pdf> accessed on June 13, 2013.



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