

# Fuel Dumping

## GENERAL

- The captain is legally allowed to make an overweight landing at destination, when the take-off weight of the aircraft was so calculated that the estimated landing weight at destination would not exceed the allowable maximum landing weight as specified in the AOM.
- When landing at an aerodrome not being the flight plan destination, the actual landing weight could be considerably higher than the maximum landing weight. In this case, fuel dumping must be considered. In view of the many factors that have to be taken into account, a uniform recommendation cannot easily be given.
- Although overweight landings do not necessarily have to cause structural damage if a minimum rate of descent is achieved on landing, it is recommended to dump fuel when the normal dumping procedure can be followed correctly and all circumstances are favorable.

## FACTORS WHICH INFLUENCE FUEL DUMPING

- Tests to determine safe methods of fuel dumping revealed the following facts :
  - When dumping fuel from an aircraft in flight, the combustible gas envelope surrounding the liquid fuel spray, presents practically no hazard to external or internal components of the aircraft;
  - Static discharges may, however, ignite sprayed fuel in an air stream;
  - Even if ignition might occur, no hazard will have to exist as long as the fuel does not contact any part of the aircraft after leaving the dump chute;
  - When an external surface is contacted by ignited fuel, burning of the surface might continue after the source of ignition has disappeared;
  - Hazard is increased by the presence of protuberances and irregularities on the surface of the aircraft, by deflection of flaps, control surfaces and gear or an increase of the angle of attack.
- No fuel must be dumped :
  - Under weather conditions in which static electricity may be expected (thunderstorms);
  - In areas of turbulence;
  - In case of external fire
  - Below altitudes of approximately 3000 ft\*, except in case of engine failure at take-off or initial climb, when immediate dumping may be required to obtain necessary performance. Do not fly into jettisoned fuel (no holding pattern)
- There could be special aircraft configuration required regarding of the aircraft equipment (some operators have not to jettison with flaps 25 or 30 extended if the aircraft is not approved for 4 jettison pumps).

# Fuel Dumping

*\*RMK : There have been some military dump tests conducted that have indicated that occasionally complete vaporization of the fuel may not occur if dumped below 5000 feet AGL. Other data has indicated that the fuel will completely vaporize if dumped at altitudes of 3/4000 feet AGL. It appears that if the fuel is dumped above 2000 feet AGL, there is a little risk to the environment. The recommendation would be to use the most conservative altitude of 5-8000 feet or above . The differences in results can be contributed to such as nozzle dispersion characteristics, the effects of aircraft wake and local atmospheric conditions (Normal ATC vertical separation is at least 4000 ft because it is basically stated that fuel completely vaporizes within 2000-3000 ft).*

- ATC must immediately be informed of the necessity of fuel dumping; if time permits, a location and altitude for dumping must be requested.

## **JETTISON OPS REVIEW**

- Discharge nozzles inboard of each outboard aileron
- Only operational for the CENTER tank
- When Switch is ON :
  - a) 2 JETTISON pumps ON
  - b) 2 JET TRANSFER VALVES opened
  - c) 1200 kg/min. for 2 nozzles (with Center fuel pumps ON) / 600 kg/min. without Center fuel pumps
  - d) 30 min. to empty the Center tank when full

Electrical load shedding will occur during fuel jettison :

- Equipment cooling fans (equipment cooling system reverts to OVRD mode)
- Bulk cargo vent fan
- Selecting light (landing lights, wing illumination, logo lights, galley lights)
- Window heat 3L & 3R
- PAX entertainment equipment
- Water line heaters