Charlotte Douglas International Airport Benchmarks

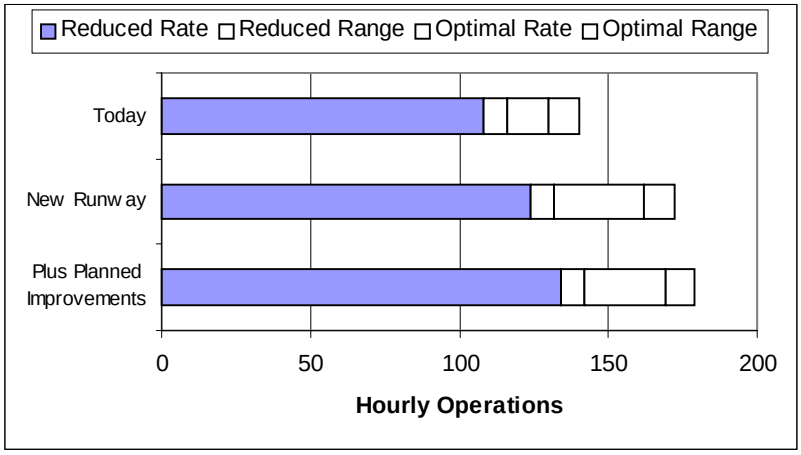
- The current capacity benchmark at Charlotte is 130-140 flights per hour in good weather.
- Current capacity falls to 108-116 flights (or fewer) per hour in adverse weather conditions, which may include poor visibility, unfavorable winds, or heavy precipitation.
- In good weather, Charlotte has substantial excess capacity despite a large number of departure and arrival peaks. Peaks are periods of high concentration of arrival and/or departure traffic.
- When capacity declines in adverse weather, Charlotte sometimes has trouble getting departures out on time.
- Less than 1% of Charlotte's flights were delayed more than 15 minutes in 2000.
- A new runway, scheduled to open in 2004, is expected to improve Charlotte's capacity benchmark in good weather by 25% (to 162-172 flights per hour) and by 15% (to 124-132 flights per hour) in adverse weather. This assumes that airspace, ground infrastructure, and environmental constraints allow full use of the runway.
- In addition, optimal utilization of the new runway, as enabled by technology and procedural improvements, is expected to increase Charlotte's good weather capacity benchmark by a total of 30% (to 169-179 flights per hour) in good weather over the next 10 years.
- The adverse weather capacity benchmark will increase by a total of 24% (to 134-142 flights per hour) compared to today.
- These capacity increases could be brought about as a result of:
  - ADS-B/CDTI (with LAAS), which provides a cockpit display of the location of other aircraft and will help the pilot maintain the desired separation more precisely.
  - FMS/RNAV routes, which allow a more consistent flow of aircraft to the runway.
- Demand is expected to grow by 15% over the same time period so delays are not expected to become a problem at Charlotte, due primarily to the new runway at the airport.

CLT – Charlotte Douglas International Airport

Airport Capacity Benchmarks – These values are for total operations achievable under specific conditions:

- **Optimum Rate** – Visual Approaches (VAPS), unlimited ceiling and visibility
- **Reduced Rate** – Most commonly used instrument configuration, below visual approach minima

Scenario	Optimum Rate	Reduced Rate
Today	**130-140**	**108-116**
New Runway	**162-172**	**124-132**
Plus planned improvements	**169-179**	**134-142**



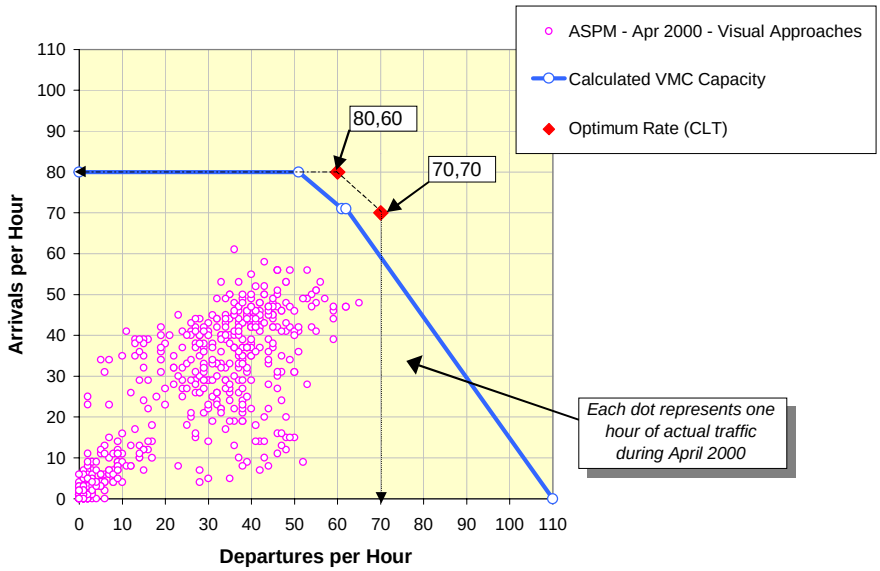
- The benchmarks describe an achievable level of performance for the given conditions, which can occasionally be exceeded. Lower rates can be expected under adverse conditions. Note: In some cases, facilities provided separate unbalanced maximum arrival and departure rates.
- Planned Improvements include:
  - ADS-B/CDTI (with LAAS) – provides a cockpit display of the location of other aircraft. This will help the pilot maintain the desired separation more precisely.
  - FMS/RNAV Routes – allows more consistent delivery of aircraft to the runway threshold.
- Benefits from Planned Improvements assume that all required infrastructure and regulatory approvals will be in place. This includes aircraft equipage, airspace design, environmental reviews, frequencies, training, etc. as needed.
- **Note:** These benchmarks do not consider any limitation on airport traffic flow that may be caused by non-runway constraints at the airport or elsewhere in the NAS. Such constraints may include:
  - Taxiway and gate congestion, runway crossings, slot controls, construction activity
  - Terminal airspace, especially limited departure headings
  - Traffic flow restrictions caused by en route miles-in-trail restrictions, weather or congestion problems at other airports

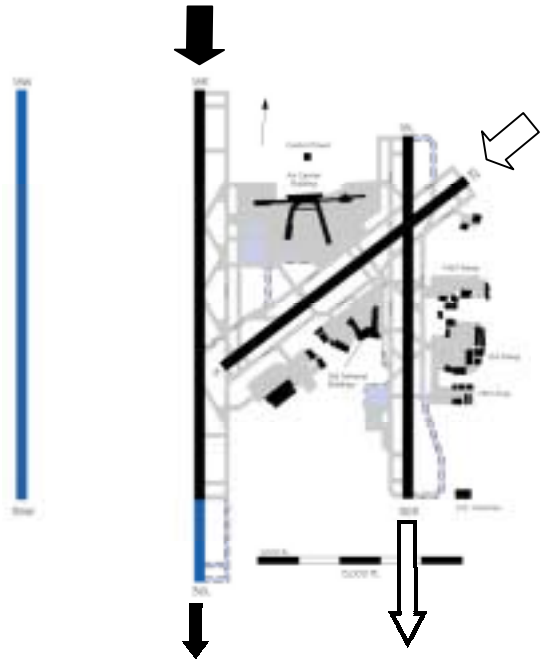
These values were calculated for the Capacity Benchmarking task and should not be used for other purposes, particularly if more detailed analyses have been performed for the individual programs.

The list of Planned Improvements and their expected effects on capacity does not imply FAA commitment to or approval of any item on the list.

Current Operations- Optimum Rate

- Visual approaches, visual separation – Optimum Rate of (80, 70-maximums) was reported by the facility
- Arrive Runways 18R/23, Depart Runways 18L/R
- ASPM data is actual hourly traffic counts for the month of April 2000 for Visual Approach conditions. This data includes other runway configurations and off-peak periods.
- Solid line represents the calculated airport capacity during a busy hour, and the tradeoff between arrivals and departure rates
- The capacity model can only approximate the operations at CLT





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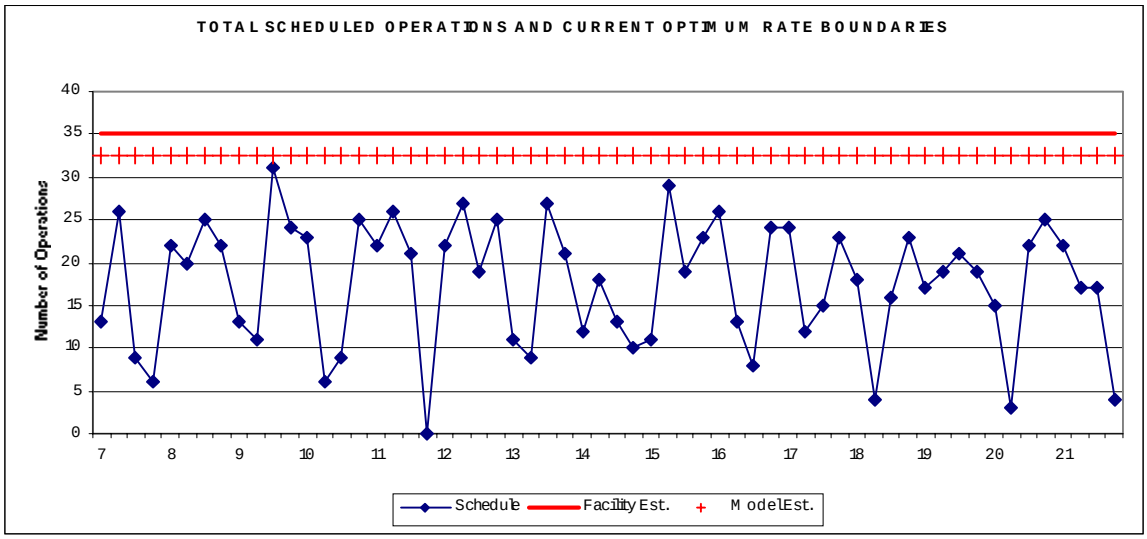
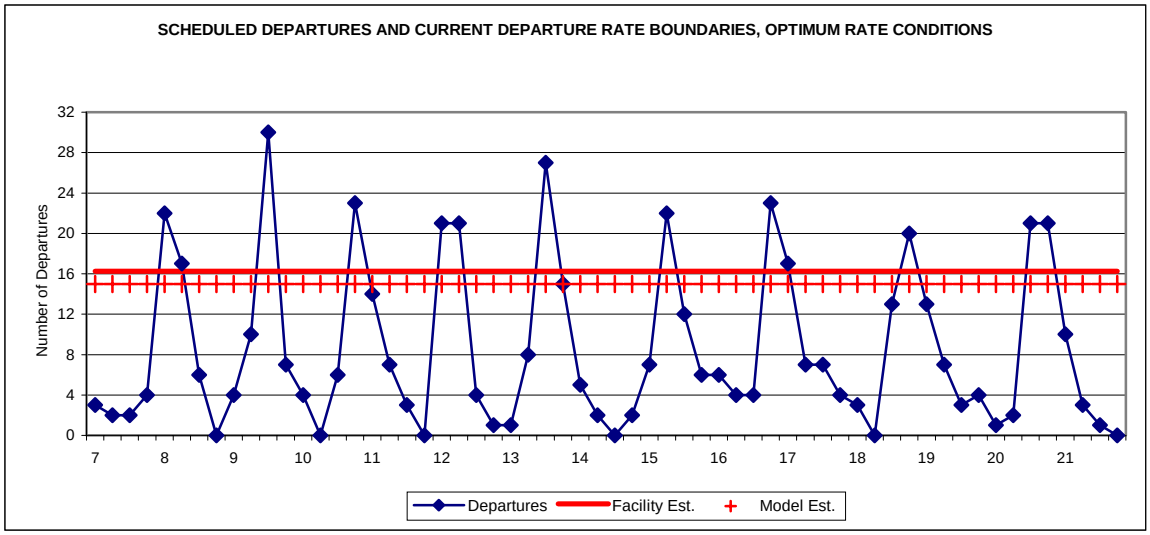
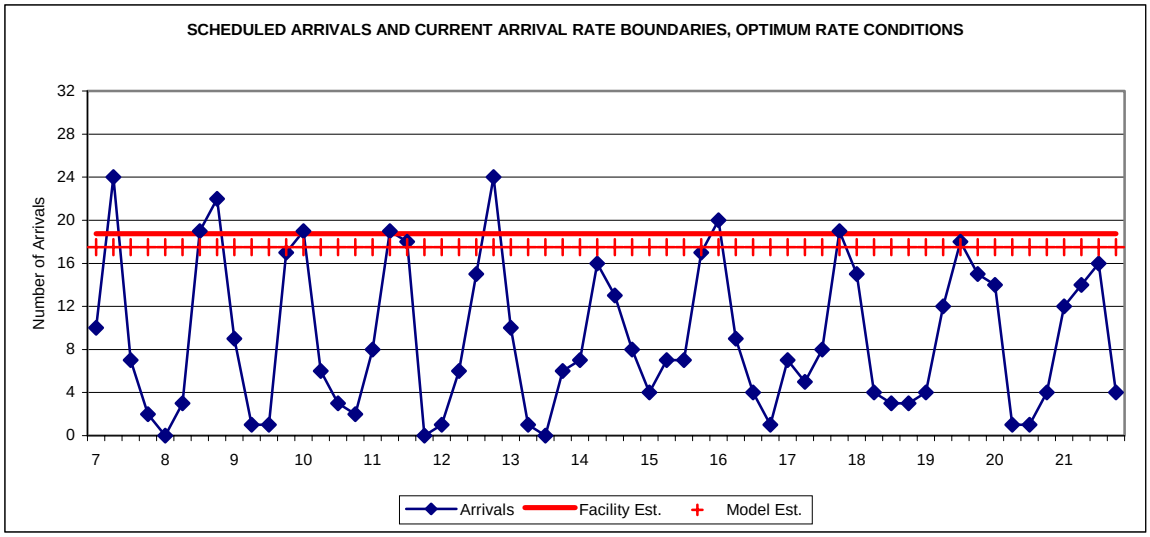
Scheduled Departures and Arrivals and Current Departure and Arrival Rate Boundaries (15-Minute Periods) Under Optimum Rate Conditions

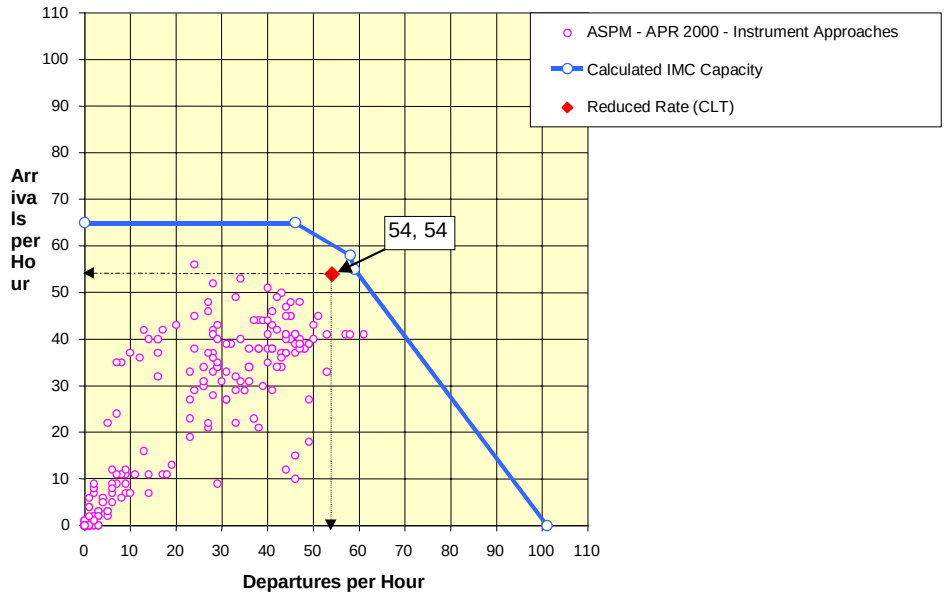


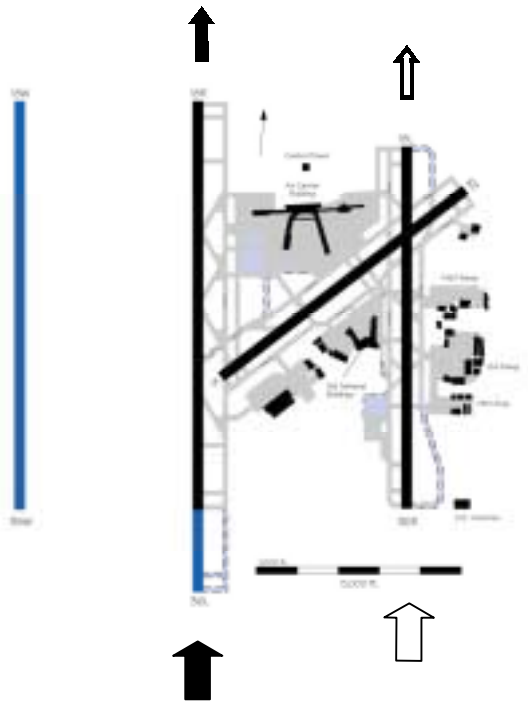




Current Operations – Reduced Rate

- Instrument approaches (below Visual Approach Minima)
- Arrive and Depart Runways 36L/R
- Reduced Rate of (54, 54) was reported by the facility
- ASPM data for “Instrument Approaches” can include marginal VFR, with higher acceptance rates
- Chart below represents observed traffic and expected rates in terms of operations per hour





CLT – Charlotte Douglas International Airport

Scheduled Departures and Arrivals and Current Departure and Arrival Rate Boundaries (15-Minute Periods) Under Reduced Rate Conditions