

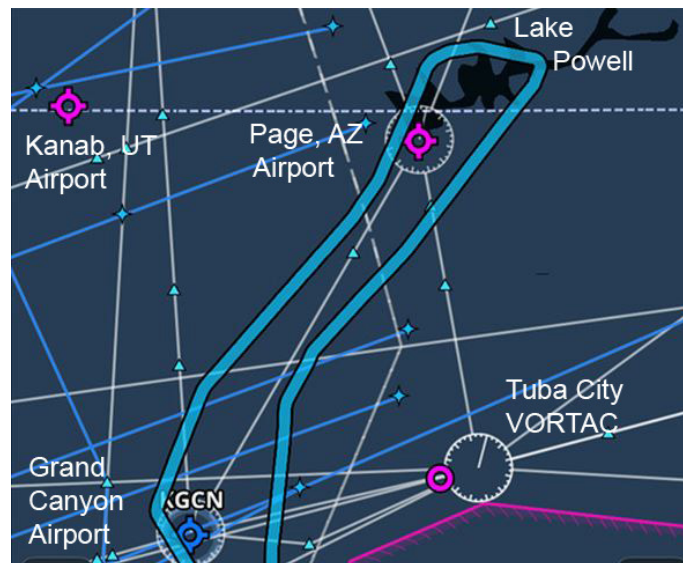
# Lake Powell Flight Part 2: Photos

## November 5, 2019

Lake Powell is a reservoir on the Colorado River, straddling the border between Utah and Arizona, United States. Most of Lake Powell, along with Rainbow Bridge National Monument, is located in Utah. It is a major vacation spot that around two million people visit every year. It is the second largest man-made reservoir by maximum water capacity in the United States. Lake Powell was created by the flooding of Glen Canyon by the Glen Canyon Dam, which also led to the creation of Glen Canyon National Recreation Area, a popular summer destination.



Lake Powell Satellite View



Flight route recoded by ForeFlight software.





Canyon looking west of Colorado River

We had flown over the Grand Canyon and were headed north east towards the city of Page, AZ. The beautiful canyon above is located about 15 miles (24 km) south west of Bitter Springs.



Colorado River channel south of Page, AZ



Glen Canyon Dam is a concrete arch-gravity dam on the Colorado River in northern Arizona, United States, near the town of Page. The 710-foot (220 m) high dam was built by the U.S. Bureau of Reclamation (USBR) from 1956 to 1966 and forms Lake Powell, one of the largest man-made reservoirs in the U.S. with a capacity of 27 million acre feet (33Km<sup>3</sup>). The dam is named for Glen Canyon, a series of deep sandstone gorges now flooded by the reservoir; Lake Powell is named for John Wesley Powell, who in 1869 led the first expedition to traverse the Colorado's Grand Canyon by boat.



Glenn Canyon Dam, note the house boat marina up the river channel.



Lake Powell House Boat Marina

The narrow Colorado River canyon channel snakes quite a distance between the Glen Canyon Dam and the the broad Lake Powell area.



Glen Canyon Dam is 710-foot (220 m) high

There has been more than a decade of drought in the Colorado River Basin. All the dams on the river are at or near historic low water levels. Note the white on the canyon walls behind the dam, the natural brown color is the high water mark.

- Lake Powell is 87.54 feet (26.7 m) below Full Pool (Elevation 3,700 ft, 1128 m)
- By content, Lake Powell is 53.37% of Full Pool (24,322,000 acre feet,  $3 \times 10^{10} \text{ m}^3$ )
- Total inflows for water year 2020: 538,435 af ( $6.6 \times 10^8 \text{ m}^3$ ). This is 69.68% of the November 9th average of 772,773 af ( $9.5 \times 10^8 \text{ m}^3$ ).



- During WY 2020, water storage has risen by 1,963,253 AF ( $2.42 \times 10^9 \text{ m}^3$ ) yet total outflows have exceeded total inflows by 276,065 AF ( $3.4 \times 10^8 \text{ m}^3$ )



Lower Lake Powell channel, note Navajo Mt. 10,348 ft (3,154 m) in the upper right



At 186 miles long and nearly 2,000 miles of shoreline - longer than the entire west coast of the U.S.A., Lake Powell covers an impressive amount of territory across the American West. There are 96 major canyons, some of which are 15 to 20 miles in length.





The scenic photos are temporarily interrupted by our descent from 11,500 ft to 10,500 ft for the flight southwards.



The top screen is the GPS. Note on the lower left, our ground speed was 204 kt.  
(235 mph, 377 kph)





Mathias was just leveling out at 10,500 ft. The vertical speed indicator was on the way to 0.



Airspeed indicator, green line Indicated AirSpeed (IAS) is 160 kts

Indicated airspeed (IAS) is the airspeed read directly from the airspeed indicator (ASI) on an aircraft, driven by the pitot-static system. Since the airspeed indicator cannot know the air density, it is by design calibrated to assume the sea level standard atmospheric density when calculating airspeed. Since the actual density will vary considerably from this assumed value as the aircraft changes altitude, IAS varies considerably from true airspeed (TAS), the relative velocity between the aircraft and the surrounding air mass.

The true airspeed (TAS) of an aircraft is the speed of the aircraft relative to the air mass in which it is flying. The true airspeed is important information for accurate navigation of an aircraft.



Input Window for True Airspeed

The pilot sets the pressure altitude and air temperature in the top window using the knob; the needle indicates true airspeed in the lower left window.



True Airspeed is displayed in the white outer band

Taking into account altitude and outside air temperature, the 193 kts True AirSpeed (TAS) displayed above translates our early numbers of to 222 mph – 357 kph.



GPS Ground Speed

The winds aloft were pretty calm, so the 193 kts TAS correlated well to the GPS ground speed display of 196KT.

The sleek design and high engine power separates the Mooney from most other general aviation aircraft. This M20R sports a 310 hp 540 cu.in. (8.8-liter) 6-cylinder engine with a three blade prop. We just completed a 1000 ft descent, so the speed was higher than cruise. As the airspeed gauge indicates, the plane can safely fly through smooth air all the way up to a  $V_{ne}$  (never exceed) speed of 200 kts. Taking into account altitude and outside air temperature, the 193 kts True AirSpeed (TAS) translates our early numbers of to 222 mph – 357 kph.





Engine Performance Monitor

Some interesting information. We had flown from the south east Phoenix metro area to Lake Powell. The power setting was “economy cruise” with air/fuel mixture at lean-of-peak exhaust temperature. The fuel consumption was about 23 gallons and the fuel flow rate is 12.5 gallons per hour. Over 66 gallons of fuel remained providing a time to empty (at cruise) of another 5 hours! Well beyond most passenger’s bladder endurance. The Mooney is a long distance machine.















Navajo Generating Station with Page, AZ in the background

Navajo Generating Station is a 2.25-gigawatt (2,250 MW), coal-fired power plant located on the Navajo Nation, near Page, Arizona United States. In 2017, the utility operators of the power station voted to close the facility when the lease expires in 2019. In March 2019, the Navajo Nation ended efforts to buy the plant and continue running it after the lease expires.

This completes the Lake Powell section of the trip. From here we transitioned the Grand Canyon on the east side of the park via the Zuni Point corridor.