



Shell Aviation News

422·1974



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Front Cover

Captain Jim Cothron, Chalk's International Airline, checks that all is clear before taxying his Mallard amphibian into the water en route for the Bahamas. A Miami, Florida based operator, Chalk's will this July celebrate fifty-five years of continuous service. See pages 2-5.



ABOVE LEFT: Mallard's First Officer loads baggage at Miami

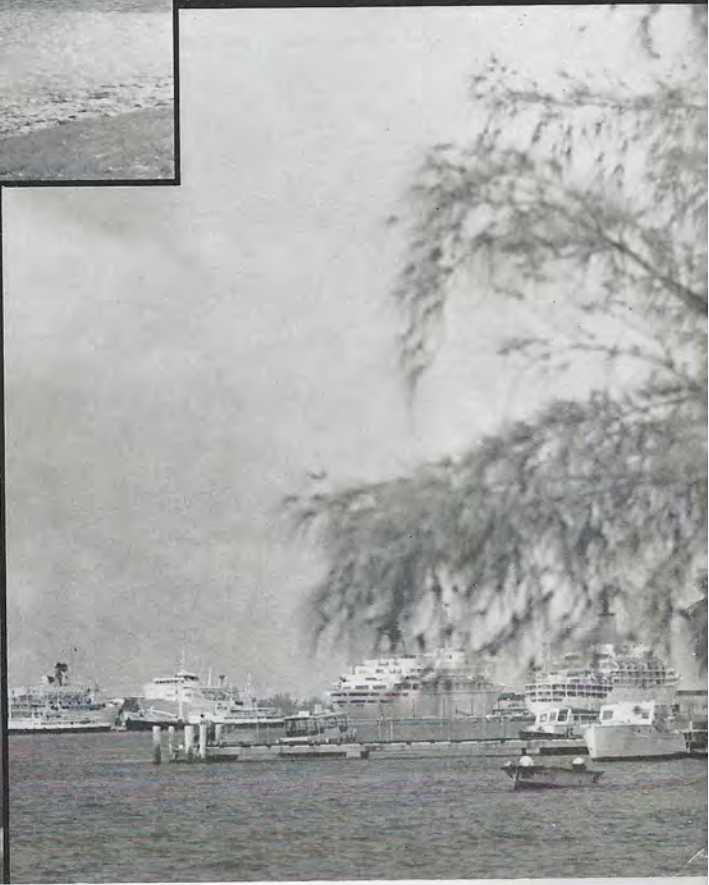
ABOVE: On the step at Biscayne Bay, Miami

LEFT: Up the ramp at Paradise Island, Bahamas

BELOW LEFT: Author on final approach into Miami

BELOW RIGHT: Cruise ships in port seen from Chalk's Paradise Is. base

OPPOSITE PAGE: Captain Cothron — 'No trip is routine'



Over the Blue

CAPTAIN JAMES COTHRON
Chalk's International Airline

The action here on Watson Island on a Sunday afternoon is something to behold. The Goodyear Blimp is coming and going every fifteen minutes, helicopters are bouncing up and down about every five, and sailboats, speedboats, tugboats, and even ocean liners, are maneuvering around in the harbor, and Chalk's flying boats are right in the middle of it all! I am one of twelve pilots for Chalk's International Airline, Inc., located in downtown Miami, Florida. We operate daylight VFR under part 135 of the Federal Air Regulations with route nine authority throughout the Bahamas. Last July, 1973, marked fifty-four years of continuous service.

At the present time we have seven Grumman Mallards with seating for fifteen passengers. The round trip fare to Bimini is \$32.00, to Nassau \$52.00 with five departures from Miami daily. Chalk's also will charter this airplane for \$250 per hour.

All of our flights penetrate the International Defense Zone so we file a DVFR flight plan with Miami Flight Service, although it is usually on a round-trip, no-arrival basis. The ADF is our best navigation aid because there are strong signals throughout the Bahamas; and here in Miami, we turn final around the WQAM tower 560 on your dial.

Flight 201 has just been announced over the PA system in the little terminal building where some of the passengers and I have been chatting. So, we all get up and amble out to the blue and white Mallard parked in the middle of the ramp. My trusty co-pilot, Kelly, will board last in order to get a head count, close the door, retract a squat strut—which keeps the tail from falling on the ground while everyone is in the rear—then make an announcement to the effect that everyone should fasten their seat belts, kindly refrain from smoking until after take-off, and that the life jackets are underneath the seats.

By the time he reaches the cockpit, both engines are usually running. After a short taxi of one hundred feet or so we're in the water. Kelly trails the cowl flaps, and if the engines are warm enough, it's 'gear up.' The nose wheel retracts first: one can watch an indicator in the forward baggage compartment travel from down to up, plus see a small plexi-glass window on the floor get dark as the wheel doors close. Then we can both watch the main gear from the cockpit windows. The panel gear indicators are unreliable. It amuses me sometimes to see one of them say 'up', another 'down', and the remaining one 'in transit'.

I sometimes start the take-off run headed for Dodge Island on the opposite side of Government Cut, so that when the automatic left turn takes place as the Mallard comes out of the water I can leave full power on both engines and we're headed straight out the channel when we get some response out of the controls. We can also stop any bucking or porpoising that is going on but it will seem like ages before that left float comes out of the water.

By the time we reach 75 mph the noise is so terrible I jam my telex in my ears another half inch to dampen it somewhat. Kelly will guard the throttles in case I decide to administer ten degrees of flaps to help facilitate lift-off which should come around ninety. It does, and I nod to him that it should be alright to set up climb power.





Over the Blue



CLOCKWISE FROM TOP LEFT:
First Officer fuels at Paradise Island
Passengers from Bimini to Nassau
Luggage is loaded through the forward hatch
Take-off at Bimini Bay, westbound for Miami
Going aboard for the return flight, Paradise Island

A check of the surfers as we zoom past the South Beach pier and we're out over the blue. I've already spotted the extra large Cumulus that must be right over Bimini, almost 50 miles away!

We level off at 1000 feet, close the cowl flaps and you-know-who sets up maximum cruise. He is still fiddling with the props when we begin our approach at Bimini twenty minutes later!

A visual check of the gear indicates that it is up and locked, so Kelly leans back and hollers for the passengers to 'hook up and hang on.'

People riding Chalk's for the first time are expecting anything, so the sound of the keel slicing through the smooth water is like music (you just can't make that kind of a landing on a runway). She slides gently to a halt amid a shower of water. We drop the gear immediately, in order to maneuver around the boats, and since we are now a boat ourselves we have no special right of way. Most of these boatmen know that we are unable to reverse or stop, so they give us a wide berth when possible.

The ramp at Bimini consists of steel plates, aluminum plates, rocks, pot holes, broken bottles and empty cans. So when we waddle ashore

with salt water dripping from one end to the other, we're always glad to feel that the tires are not flat. Many a nose wheel and several main wheels have been changed at Bimini.

While we await the arrival of the Bahamian Customs and Immigration officials, Kelly huddles the passengers into the shade of the left wing of the Mallard, being careful not to stand directly under the engine, lest an occasional drop of oil or hydraulic fluid soil their vacation attire.

I have found it more expedient to allow the co-pilot to handle the paper work, and since the ramp men know their job we're ready to depart in no time. Kelly takes us down to Cat Cay where we deliver two passengers, the mail and newspapers, then off to Miami and Government Cut. The approach here is always a challenge and it is best to 'expect the unexpected', and *never* to land behind a tugboat underway! We splash down at about 70 mph and have a few awkward moments as we skip to a halt among the boats. Once up the ramp, and through US customs, we're ready to go again.

I've made several thousand of these trips but still do not consider them routine.

Handling notes

The Mallard has a maximum gross weight of 12,750 lb, allowing about 3750 lb of useful load. Power is provided by two Pratt & Whitney 1340 radial engines. The design features a high speed slotted wing which allows a cruising speed of approximately 160 mph while burning about 25 gallons of fuel per engine per hour, yielding a range of at least 1000 miles. The airplane has a complete hydraulic system which operates most services leaving only the fuel boost pumps as electric. Another unique feature of this Grumman is its free casting nose wheel which affords a greater degree of control on land.

The preflight walk around is similar to most other aircraft with one important addition—hull and wing float plugs. These are removed to allow water to drain from the bilges after ramping. Failure to reinstall them before the aircraft is taxied into the water could result in sinking or at best could hamper or prevent take-off.

When starting the engines, the propellers are first rotated with the mixture controls in idle cut-off position and magnetos turned off to assure all oil is removed from the lower cylinders. Next, priming is accomplished by switching the boost pumps on with mixtures still at idle cut-off and pumping the throttles three or four times. Boost pumps are then shut off, mags turned on and the starter engaged. As the engine fires, mixture controls are moved to 'full rich', allowing engines to keep running.

Before taxiing the tail strut, a device for supporting the tail during loading, is raised. Directional control is achieved by the use of brakes and differential power as the nose wheel is non-steerable. Once in the water, differential power is the controlling factor with some help from the rudder. Water taxi over a short distance is accomplished off of the step allowing a forward speed of about 8 kt, which can be further reduced by lowering the gear. This also affords greater maneuverability.

Water taxi over long distances should be done with the aircraft planing on the step, to minimize spray damage to the propellers.

Land take-offs are similar to most other tricycle gear airplanes. Rudder control is quickly gained and lift-off comes around 80 mph. The hydraulic gear is a pleasant change from the hand crank used in the Goose. Flaps are generally not used on land; however, during a water take-off 10 degrees will shorten the run considerably.

After clearing the water and reaching V_2 (100 mph) power is reduced to a climb setting of about 30 inches of manifold pressure and 2000 rpm. Flaps are then retracted and cruise-climb of about 120 mph set up to insure adequate engine cooling.

Cruising altitude attained, the aircraft can be leveled off to build up to cruising speed. Cowl flaps are then closed and power further reduced to 27 inch manifold pressure and 1700 rpm.

Approach is initiated at about 100 mph, well below flap and gear extension speeds. The landing gear check is of prime importance as there is no landing gear warning device, and gear down during a water landing will prove more disastrous than a gear up on land.

Runway landings, again, are typical of most tricycle gear aircraft with good rudder control throughout.

Flaps are used on both land and sea. Although the flight manual approves the full 45 degree position, we have found a maximum of 30 degrees affords more positive elevator control in the event of a go-around.

For the smoothest water landing a slight nose-high attitude is maintained to contact the water at the slowest possible speed, and as the keel starts knifing the water, some of the back pressure is relaxed on the yoke. If swells are encountered the nose can actually be pushed into the wave to prevent a porpoise from developing. If at all possible the Mallard should be held on the water while decelerating to prevent being thrown into a stall.

Once off the step, the landing gear can be lowered for ramping or the engines shut down for anchoring.

At this point, a word should be said about ramping especially in high winds. Approaching the ramp upwind is no particular problem because the aircraft naturally tends to head into the wind. Approaching downwind, however, requires special techniques and some fortitude. Getting turned downwind is the most challenging maneuver and should be planned so that, when completed, the aircraft is as nearly upwind from the ramp as possible, for it is much easier to control with the wind directly over the tail than from the side. Once committed to the ramp, care should be taken not to backfire the engines by abrupt throttle usage. A good preventative measure is to use the boost pumps, and in extreme cases, carburetor heat.