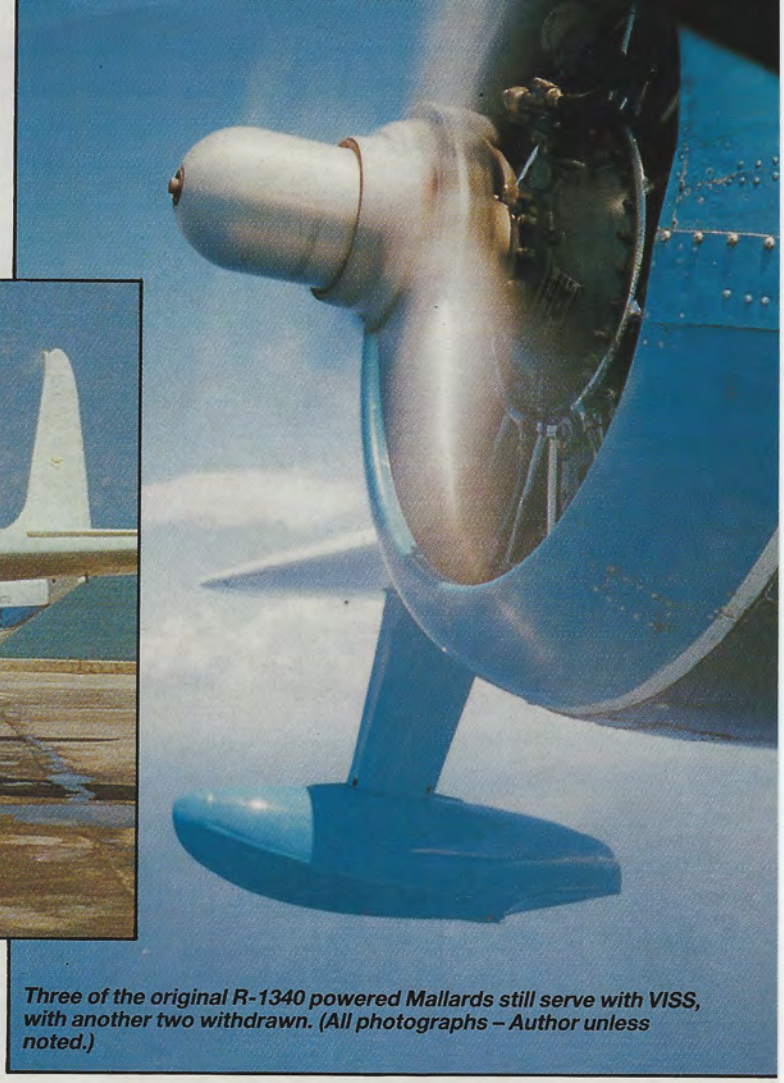
Grumman Mallard pilot Mitch Mayborn writes about life with the Virgin Islands Seaplane Shuttle, including being the victim of an unlikely hi-jacking!

Above: N651SS, one of three Frakes Turbo-Mallards in the fleet. VISS hope to acquire more. Below: VISS call their seaplanes 'Tropicbirds' and this view helps show the idyllic settings the fleet work in.



Three of the original R-1340 powered Mallards still serve with VISS, with another two withdrawn. (All photographs – Author unless noted.)

SEAPLANE

SHUTTLE

ONE OF THE LAST flying boat airlines operating in the tradition of Imperial Airways or Pan American, the Virgin Islands Seaplane Shuttle (VISS) is now billed as 'the world's largest seaplane airline.'

Our routes are but a tiny version of what used to be for instead of Southampton to South Africa or Los Angeles to Hong Kong, we cover the US Virgin Islands, Puerto Rico and British Tortola. Instead of the long range, many passenger versions of *Empire* Class Shorts, or Martin, Boeing or Sikorsky *Clippers*, we operate fifteen or seventeen passenger Grumman Mallards and fly with about an hour's worth of fuel.

While our routes are short – the *longest* is 95 miles from St Croix to San Juan, and the *shortest* is but ten miles from St Thomas to St John, and our maximum passenger load only seventeen, the principle is the same. We're using amphibian flying boats on a daily basis with almost fifty passenger and cargo flights from seadrome to seadrome and provide a unique service to the Caribbean.

We currently operate five Grumman Mallards built between 1947 and 1950. Two of these are in the original configuration with piston engines. Three others are now powered by turbines. The original Grumman G-73 is a 12,750lb aircraft powered by two Pratt & Whitney R-1340-S3H1 Wasps of 600hp, configured for up to fifteen passengers. We have two additional G-73s which are our *hangar queens*.

VISS's turbine Mallards are the Frakes G-73T conversion. Other than more sophisticated radios, radar and a commonality not found on the piston versions, the main difference is the change of powerplant to the Pratt & Whitney PT-6-34A engine which delivers 715hp and 'air conditioning' for the passengers. Overall weight for the G-73T is 14,000lb and they are configured for seventeen passengers. We have a fourth G-73T on order for early delivery.

The Author (left) and Captain Neil Coulston celebrate safely back at St Croix after the abortive hi-jacking of Flight 329. (Matt Rodina)

Using the call sign *Waterbird* VISS is a direct descendant of the Antillies Air Boats made famous by Captain Charles Blair. Former American Export Lines flying boat captain, Blair was the pilot who flew the P-51B *Excalibur* across the North Pole and operated Antillies Air Boats. Antillies flew a series of exotic flying boats which included Short Sandringhams, Grumman Albatross, the Sikorsky VS-44, Catalinas and of course the Goose (never Geese, by the way!). At that time the airline was called the *Goose* by one and all.

For myself, the chance to fly a flying boat operationally was a dream come true. I'd written a number of historical aviation books including the *Grumman Guidebook*, and had been steeped in the lore and history of water flying. I knew that life would be eventful but I didn't count on getting hi-jacked!

Flight 329 originated at St Croix with a stop at St Thomas, terminating at San Juan, Puerto Rico, using Turbo-Mallard N609SS. Captain for the flight on June 5, 1987 was Neil Coulston, with the author in the right-hand seat. While approaching San Juan, one of the passengers approached the flight deck and threatened to blow up the aircraft.

After persuading the Spanish-speaking hi-jacker, who was dressed in fatigues and carried around three-days of beard growth, that there was not enough fuel on board to take '329 to his desired Cuba, we were allowed to land at San Juan and taxied into Gate 21.

The area was sealed-off and the local Police, the Tactical Division and the FBI started negotiations with the hi-jacker. Using a battery powered telephone he explained to the negotiators that the bomb he had was "very sensitive". Quickly he was persuaded to let the passengers go, leaving Neil and me to sweat it out.

Playing a wait-and-see game, the FBI let things drag on into the early morning. Eventually, we explained to the individual that we were going to "go for money for gas and get maps." We both walked off the aircraft unharmed and let the FBI deal with him!

As any flying boat pilot will tell you, when learning to fly such a craft, the learning curve isn't always straight up! I quickly found out that a 'porpoise' wasn't a fish and that when you don't get to take-off into the wind the waterbird will try to do it for you. S-turns on take-off aren't uncommon – just keep your wings level and miss the boats and windsurfers.

As I write this, I have just recently been moved to the left seat as part of the Seaplane Shuttle's 'Captain-in-Training' programme. With two years at the company and about two thousand hours in the Mallard, half in the G-73 and the other half in the turbine powered G-73T, it was time for an upgrade.

Just 'flying' the Mallard is much like 'flying' any aircraft. But the move to the left seat in any flying boat entails more than flying – that's the easy part. For example, the pilot in command has to steer the waterbird like a twin-engined boat, has to take into consideration the weather-vaning effect the wind has on the aircraft and to be able to find the centre of the ramp, move up it gracefully and not slide off the side.

First time you take a plane down the ramp can be thrilling. I wasn't sure if I was lined up straight (I wasn't) and we went down about 10° off centre. Our training captain, Marty Thompson is from the old school, so I was berated unmercifully for my ineptness – even though it was a first try!

Normally the landing gear is selected UP upon entering the water but with adverse wind conditions, the added drag of extended gear will make steering easier. On this day I selected gear up and we proceeded to taxi out for take-off.

On the water, a flying boat will *always* weather-vane directly into the wind. You control your direction across the water with the added power on the up-wind side to counteract this turning moment. This is sometimes easier said than done for the 'beginner' doesn't sense wind gust changes quickly.

The idea is to taxi with minimum power – either with the engines at idle on the piston or ten pounds torque or less on the turbine. "Always reduce power before adding it" is the rule when taxiing on water and it works. I'd find myself adding power to one engine, then

The islands served by VISS in a busy island-hopping schedule. (VISS)

compensating by adding to the opposite. Shortly I'd get beat about the head (verbally, of course!) and I'd pull 'em back and start over.

Today, we are in N611SS, a G-73 with the 600hp Wasp engines. As we taxi out, we go through the before take-off checklist. The First Officer (F/O) makes the calls and the Captain confirms. Ours is fairly simple: "Seat Belts/Secure; Controls/Free; Props/Forward; Flaps/Set; Trim/Set; Mixtures/Rich; Radios/On; Generators/On; Carburettor Heat/Cold; Gear (on water)/Up; Temperatures and Pressures/Normal." The cowl flaps (gills to you) are closed as we make the turn for take-off and are confirmed by "Cowl flaps/Closed."

As I reach the take-off position – which can require considerable judgement because of the wind and other factors, power is pulled back and the downwind engine is goosed slightly to speed the turn into the wind. If you've done it right, you don't start your take-off through your wake – which can be considerable!

Our standard before take-off cockpit briefing is, "If an engine fails below V1 we abort. If it fails above V1 and there's good water ahead, we may still abort. If it fails above V2 (88 knots) we'll go around."

On the Wasp-powered Mallard, power is advanced smoothly to 36″ MAP with the props at 2,250 rpm. This is all 600hp working and we have a one minute limitation at this power setting. The wheel is held full back for a few seconds – some say until you don't see the white water out of your side window – which has to be done with peripheral vision for by now you are looking ahead for various malevolent things like fast boats, slow boats, swimming horses, windsurfers or miscellaneous submerged objects!

Then there's the dreaded 'porpoise' which can bite the unsuspecting seaplane pilot. When I first started flying the Mallard I had a terrible time getting it on the step and off the water without a few wild leaps. Each pilot has his own 'style' and on different days I flew with men with different solutions. Finally I learned to put the trim tab setting exactly 'neutral' no matter what the centre of gravity was and the Mallard would fly itself nicely on the step with full control.

Unlike a landplane whereby you 'add power' and go, you sometimes have to wrestle the Mallard onto an even keel, kicking right rudder for example to get a left float out of the water and not letting the nose fall through onto the step – in which case you can get a wild ride. And you do these things simultaneously with looking out for the many moving water hazards.

Power is up, gauges glanced at and the F/O guards the throttles. We go roaring across the harbour, accelerating to 65 knots or so when take-off speed is reached. Slight back pressure and we lift off cleanly. A bit too soon or a bit too heavy, you'll get the nose too high and you skip along dragging your tail uncomfortably until a higher speed is reached.

I hold the nose low and ten feet out of the water, accelerate to eighty knots and retract the flaps. About this time we should be at ninety knots and I hold out one finger – a sign to the F/O for the first power reduction. I pull the props back to 2,200 rpm and the F/O reduces the power to 34″ MAP – METO (Maximum Except Take Off).

We hold 100 knots on the airspeed and this power setting to around 400 feet. At this altitude I hold out two fingers and the F/O reduces the throttles to 30″ MAP and I reduce the props to 2,000rpm. The considerable noise level subsides and our regular passengers take their hands off their ears! Conversation – especially in the first rows beside the engines – is limited unless you want to shout a bit.

I call for an "After Takeoff Checklist", "Boost Pumps/Off: Gear/Up: Flaps/Up" and each pilot confirms "a good engine on his side." Gauges are checked and if necessary, the cowl flaps are opened slightly to aid engine cooling.

At cruise altitude I check the fuel gauges and reduce the power to 30″ MAP and 1,800 rpm. We settle back for twelve more minutes of flight before we descend for landing. We look for whales (I haven't seen any for a while), we check our navigation (usually look at where we are going!) and monitor our instruments. With the Mallard trimmed for straight and level I put my feet on the floor and occasionally nudge the wheel to level the wings a bit or hold the altitude precisely.

When you are flying up to eighteen legs a day between St Thomas and St Croix (with maybe a British Tortola thrown in), you do things as efficiently as possible. We carry 'standard fuel', thirty gallons in each side which gives us round trip fuel for a single flight (ie meets the requirement for fuel to our destination plus thirty minutes extra). We have 'company' altitudes which start as low as 500 feet from St Croix to St Thomas. They increment in opposite directions by 300 feet (ie southbound at 800 feet) up to 3,000 feet when we fly by the standard 'hemispheric rules'. We don't usually fly low unless clouds dictate since "altitude is like another engine!"

Today we are flying to St Thomas. Descent is made so as to reach the west end of Water

VIRGIN ISLANDS SEAPLANE SHUTTLE

Mallard Data

THE MALLARD is a tricycle landing gear, twin engine high wing amphibious aircraft. First flight of the prototype was April 30, 1946. It received Approved Type Certificate 783 on September 9, 1947 under CAR-4B, which approved it for scheduled air carrier operations. First delivery was September 27, 1946. Last delivery was May 4, 1951. Constructor's number range ran from J-1 through J-59. Price of the early models was $115,000 in 1947 and this increased to $150,000 by 1950.

The G-73, built by Grumman is powered by two air cooled single row nine-cylinder radial engines, the Pratt & Whitney Wasp S3H1 (R-1340) of 600 take-off hp. (Some variants have the S1H1 engine). Propeller is a Hamilton Standard Hydromatic full feathering 3-bladed prop. Maximum speed is 191 knots, cruise at 140 knots and stalls, with flaps and gear down at 60. Maximum gross weight is 12,750 pounds. Wingspan: 66′8″; Length 48′4″; Height 18′9″; Tread 12′10″. It can have one pilot but two are required for scheduled airline operations. Up to fifteen passengers.

The G-73T, is modified by Frakes Aviation. First flight was September 5, 1969. Engine installation is a Pratt & Whitney PT-6A-34 flat rated to 715hp (680 shaft, 35 thrust). Propeller is three-blade Hartzell full feathering/reversible 96″ diameter. It has a gross weight of 14,000lbs. Performance increases include 205 knot maximum speed, with a cruise of 165 knot TAS.

(Data from Matt Rodina and G-73 and G-73T Flight Manuals).

Below: Handling an amphibian requires new skills and a keen eye for other users of the water!

Island at 500 feet. About ten miles out we call the St Thomas tower on 118.8 and let them know we are out there. Even though we aren't landing at the airport we are in their traffic area. We co-operate easily and they are good about giving traffic reports.

Assuming a 'normal wind' which will be from 70° to 100° on the compass at around ten knots, we'll approach through West Gregerie channel with the main island to our left and Water Island to our right. I'm using about 16" MAP and with one or two notches of flaps will hold an approach speed of ninety knots.

Approach is over rows of moored sail boats. At the east end of Water Island, I'm now – more or less – committed for landing in Haulover Cut – *The Cut* in pilot-talk. Bounded by the main island on the left side and Hassel Island on the other *The Cut* is about 200 feet wide, and is nice because there's 300 feet or so of almost always smooth water. But beware! When the wind swings around to 120° at fifteen knots, you get terrific wind shear. You learn to judge gusts (dark, riffled water) with lift and dead air (smooth, shiny water) with no lift.

I say "more or less committed" because we are always spring-loaded for a go-around in case a small boat leaps out from a hidden cove. After all, he has the right of way.

As I pass Water Island I reduce speed to eighty knots or less, add the final notch of flaps (45°) and advance the props to high rpm. I hold a slightly nose-up attitude and maintain airspeed with the throttle. There's no boat in the way today so I pull back ever so slightly and allow the Mallard to settle gently on the water.

We plane out smoothly, throw out the landing gear and visually confirm it is down and locked. Our gear position indicators take a beating getting dragged around in the water and aren't always 100% accurate. So one of our important checks of the gear is visual.

I add a bit of power to smoothly climb up the ramp. At the top I reduce it to idle and continue a slow taxi to our parking spot where I add power to the right engine, clamp down hard on the left brake and swing around and wait for the 'cut engines' signal from a ramp agent. The Mallard originally had a retractable tail post to prevent it from falling on its tail when the passengers went aft to exit. Ours have all been removed and we have the ramp agents place a portable stand at the aft of the hull. We don't cut the engines until this is in place.

As I shut it down, I look out and notice the usual group of smiling tourists taking our picture. While the F/O helps the passengers exit. I kill the magnetos and reset the trim for our return to St Croix – in about eight minutes when we get to do this all over again!

Above: Coming up the ramp in a 'piston' G.73. Apart from the obvious tourist attraction, VISS offers an essential method of commuting for islanders. Below: Turbine G.73 prepares to waddle into the water on another shuttle flight.

The VISS Seaplane Fleet

'N' Number	Type	Date Built	Flying Time	Status
N609SS	G-73T	early 1947	33,340	Operational
N611SS	G-73	Sep 6, 1947	16,886	Operational
N628SS	G-73	Aug 20, 1947	17,298	Withdrawn Sep 4, 1986
N632SS	G-73T	Nov 26, 1947	12,510	Operational
N651SS	G-73T	Jan 9, 1950	15,240	Operational
N653SS	G-73	Oct 7, 1950	13,177	Operational
N655SS	G-73	Nov 18, 1950	17,600	Withdrawn Nov 1987

Note: Flying times (given in whole hours) are as of April 1988. VISS register their aircraft incorporating the constructor's number (c/no) prefixed with a '6'. Thus N609SS is c/no J-09, N651SS is c/no J-51 etc.