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Seaplane commuter
Chalk's Turbo Mallard
taxis at Bimini

Special feature
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commuter profile

by land and by sea

Amphibious commuter airlines struggle for survival

By Jim Kerr

Amphibious commuter airplanes like the Grumman Goose and Mallard seem almost the answer to a resort owner's dreams—offering convenient downtown departure from crowded city areas, yet able to drop vacation-bound tourists on the beach in front of their favorite hotel. But dated aircraft, seasonal trade and a shortage of spare parts make operating a seaplane commuter especially tough. Two that are trying—and surviving—are Antilles Air Boats and Chalks.

GOOSE, Mallard, Albatross. Leroy Grumman and his company named them well; an enduring breed of seaplanes with swan-like grace and pelican persistence. They are still very much in evidence today despite their circa World War II origin.

Some say time has sealed their fate and placed them on the endangered species list, but at least two airlines depend on these birds for their very existence. And thanks to modern turboprop technology, both are showing

encouraging signs of new growth after years of decline.

Antilles Air Boats, the world's largest seaplane airline, operates seven Grumman Mallards and six Gooses in the Virgin Islands while Chalk's International, the world's oldest scheduled airline, flies six Mallards on its Miami-Bahamas links.

Both airlines are owned by Resorts International, a well known US company with hotels and gambling casinos in Atlantic City NJ and the Bahamas.

The Miami-based firm is currently gambling millions of its own dollars on the success of these two commuter carriers and the successful rebirth of an unlikely amphibian commuter aircraft called the Albatross.

Resorts has recently acquired 12 of these aging military amphibians from around the world, and has invested five years and more than \$2 million getting a prototype certified for 28-passenger commercial use. Yet, after all that money and effort, Resorts is



Mallard at Chalk's Watson Island terminal

unsure of what it will do with this Albatross and the 11 others it has contracted Grumman to convert.

"We feel there's definitely a place for them," says Robert L Treat, a Resorts Aviation Division engineer and pilot instrumental in the re-certification of what is now called the G111 Albatross.

But neither Treat nor anyone else at Resorts knows at this point what they will do with the born-again Albatrosses. The options include leasing or selling the seaplanes to other operators or putting them on line at Chalk's and Antilles. At last report Resorts says it has interested buyers for the first two or three G111s that roll off the line at Grumman's new St Augustine FL facility. A fourth is tentatively destined for Chalk's operations between Miami and the Bahamas, scheduled to go on line in April 1981.

There are other factors Resorts has to ponder as well. Both seaplane airlines are currently losing money—lots of it. While Chalk's does operate in the black during certain times of the year, Antilles was heavily in the red in 1979 and seemed headed towards a similar deficit in 1980. Just how far Resorts will go to keep these ailing airlines afloat is unclear, but the company has already invested millions and is not about to give up on the idea that seaplanes can make money—despite their poor track record in the past.

Resorts branches out

RESORTS PURCHASED Chalk's in 1974 as an "adjunct" to its casino and hotel interests in the Bahamas. In addition to its seaplane operations, Chalk's owned a large hunk of land in Nassau harbor that was ideal for a seaplane ramp and terminal. Today that real estate's known as Paradise Island, and Chalk's does a brisk business flying

tourists, businessmen and Resorts personnel in and out of the popular resort area while also maintaining its traditional routes to Bimini and Cat Cay, about 50 miles east of Miami.

Resorts added Antilles Air Boats to its stables in 1979, picking up the Virgin Islands commuter to complement Chalk's operations, and as part of Resort's "overall interest in the travel and leisure industries."

Antilles was founded by Captain Charles F Blair, holder of several world aviation records and Chief Pilot at Pan Am until his retirement in 1969. Blair's impatience with getting around the islands near his St Croix home resulted in his purchasing a 10-passenger Grumman Goose for \$10,000 in 1963. He initiated scheduled runs between St Croix and St Thomas soon after, and the business took off. At its peak in 1978, the operation shuttled up to 1000 passengers daily throughout the Virgin Islands, San Juan and St Martin. The Antilles fleet grew correspondingly, and at its largest consisted of 15 seaplanes, mostly Grumman Gooses, a twin engine ship first

built in 1937.

Resorts initiated talks with Blair about acquiring Antilles in 1978. The airline was then operating in the black but barely so—it needed massive infusions of capital to replace worn out equipment and airplanes.

Disaster strikes

THEN, on September 2 1978, Blair was piloting a Grumman Goose from St Croix to St Thomas when the left engine blew a rod. Blair tried to fly close to the water to take advantage of surface effect, but the aircraft hit the five-foot swells at 100 mph, cartwheeled and sank. Seven passengers survived but Blair and three others were killed.

That accident, along with an earlier fatal crash and a number of other incidents, caused Antilles business to plummet. The FAA, accused of complacency in ignoring the airline's repeated maintenance violations, beached most of Antilles fleet. For a while the airline operated with only a lone Mallard and one Goose. A blistering NTSB report, a lengthy and well-documented analysis of the accident, didn't help the situation. It indicated the intrinsic problem with the airline had been Blair himself.

Described as a soft-spoken but headstrong individualist, Blair was both president and general manager of Antilles, making all major decisions from scheduling to maintenance procedures. Under his management the airline was cited by the FAA on several occasions in 1977 and 1978 for weight and maintenance violations. In the crash that killed Blair, the NTSB said



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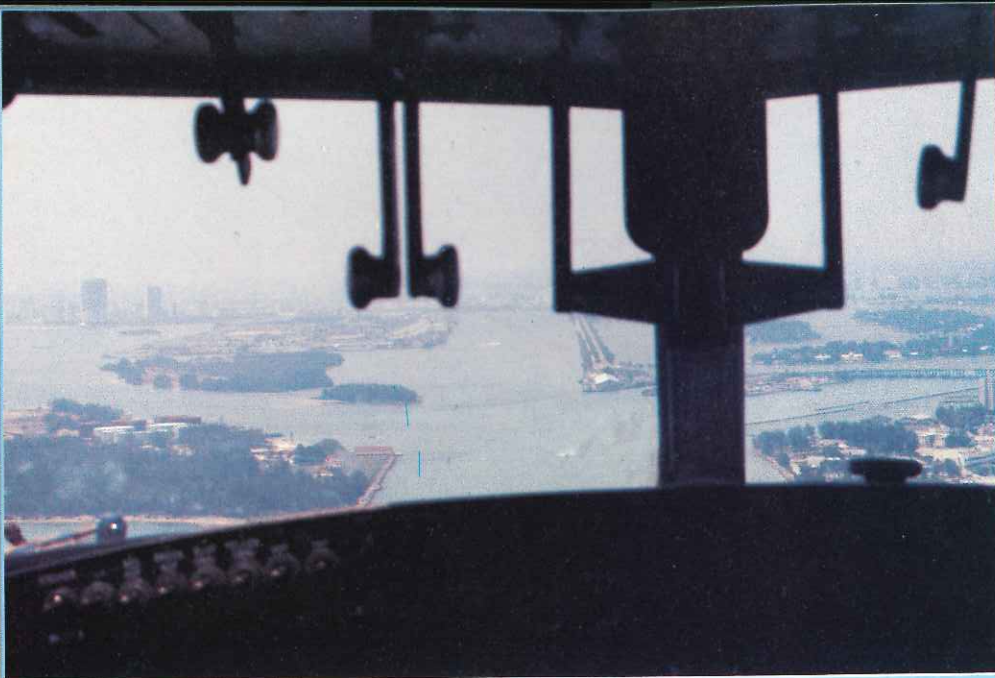
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Chalk's Turbo Mallard on final for Miami Harbor's frequently crowded Government Cut channel.

the failed engine had been in storage for 10 years before installation and had not been overhauled since. The prop blades on the remaining engine, the report said, had been reworked and replaned so often that its thrust was significantly reduced.

Despite the obvious problems, Resorts went ahead with the purchase that same year, acquiring 97% of Antilles outstanding stock in exchange for 63,300 shares of its own. Blair's wife, former movie actress Maureen O'Hara, remained on as president of the airline. Today she is an outspoken promoter of seaplane transportation in general and Antilles Air Boat in particular. She denies her husband knowingly violated FAA regulations.

Mrs. Blair reportedly turned down several offers from other buyers who wanted a complete takeover. She went with Resorts because the company allowed her to stay on as president, with some corporate decision-making authority.

Flight operations

THE MAN in charge of the day-to-day running of Antilles Air Boats is former aircraft carrier pilot Nick Castruccio. An Annapolis grad and retired Navy Captain, Castruccio joined Antilles as a line pilot in 1971 and moved up to chief pilot in 1975. In 1976, he resigned.

"I didn't see necessary changes happening and I didn't think they would," he says.

In October 1979, Resorts talked him back as general manager and director of operations.

"On the day I arrived, 75 people were sent to the local land airport because we had no serviceable airplane until it was too late to fly," he recalls.

Big improvements have occurred since. Today Antilles operates 120 scheduled flights to the islands of St Croix, St Thomas, St John, Tortola, Puerto Rico, Fajardo and St Martin. Its seven Mallards and six Gooses carry about 600 passengers a day. Major changes implemented by Castruccio have been in the areas of maintenance, equipment and parts standardization, pilot hiring and training and delegation of responsibility.

From the black, red and white uniform paint jobs, to cockpit configuration and avionics, the Antilles fleet is now being standardized. Castruccio is building an inventory of spare parts to minimize down time, a critical factor in the isolated islands where even a minor part can take a week in transit.

Maintenance is in strict accord with FAA regulations, Castruccio says, and qualified, key personnel are being hired to head vital departments. Pilot salaries, once based on the number of landings, have been raised and standardized, and all pilot-applicants are carefully screened before hiring. Training is more extensive, with more landings in varying wind and water conditions.

Castruccio says not all pilots meet his strict standards.

"There are a lot of seaplane pilots around, but many are individualists who are hard on airplanes and don't like regulations."

Castruccio's efforts have apparently paid off. Despite heavy financial losses

over the past two years, he feels Antilles has "turned the corner on reliability, safety and passenger confidence."

Prop wash

THE KEY to success or failure in any seaplane operation is maintenance costs. Today, 36 years after the last Goose was built and 29 years since the last Mallard rolled off the assembly line, there is a critical shortage of parts. Through the years, a handful of entrepreneurs have cornered the market on seaplane spares and charge premium prices for them. Many other parts, such as the Mallard's Hamilton Standard props have to be specially manufactured. The custom building of new prop blades is expensive—each blade costs about \$600, or \$1800 for the whole prop.

Because of the scarcity, and expense, of new props both Antilles and Chalk's pilots are as careful as possible about keeping the blades out of the water. But props invariably hit a wave or wake during the course of a day's operations—this contact can actually bend the prop tips. Takeoffs are especially critical in this regard, as both radials are cranked up to their full 2250 rpm takeoff power and hitting the water at that speed, can do almost as much damage as hitting cement. Though tip damage is correctable through periodic dressing with a fine abrasive, the blades can only be reworked so many times before their basic airfoil shape is changed, leading to dangerous vibration and lack of thrust.

The switch to turboprops

THE FACT that 72 Gooses are still registered in the US, and 38 of the 58 Mallards built between 1947 and 1951 are still flying is in part testimonial to the durability of the Pratt & Whitney recip engines they are equipped with. The 450 hp radials on the Goose and 600 hp engines on the 15-passenger Mallard have carried hundreds of thousands of passengers all over the world in the past 30 years.

But their days are numbered. The future, everyone agrees, is in turbo-props.

Last year Chalk's leased a Mallard fitted with two Pratt & Whitney PT6A-34s—a modification pioneered by Frakes Aviation in Dallas TX. Chalk's flew the aircraft hard for six months,



Antilles Chief Pilot Chuck Billman adjusts throttles on Mallard.

Photo by Murray Smith



Nick Castruccio, general manager of Antilles Air Boats.

and carefully evaluated the updated ship's performance and operating costs.

The Turbo Mallard cruised over 40 kts faster than the old radial-equipped craft, and cut the Miami-Bimini flight from 30 to 19 mins, and the Miami-Nassau run from 75 to 56 min. Reliability and payload were also increased, and the faster cruise speeds and less downtime meant the Turbo Mallard was available to fly an extra two hours each day. The turboprop engines also vibrate much less than the radials, reducing wear and tear on the airframe.

Pleased with the increased performance, Resorts bought the Turbo Mallard for \$800,000, ordered another converted and took options on nine more—enough to re-equip the major portion of both Chalk's and Antilles' fleets. If Castruccio's Antilles operations continue to improve he has been promised up to five of the refurbished birds.

While not at all sure it will exercise all nine options, Resorts is certain of one thing—that turboprops are the only thing that can make the Mallard survive as a scheduled carrier.

"The future for seaplanes would be dismal if it weren't for the turboprop," says Chalk's boss Walter Shinn, a 64-year-old retired National Airlines pilot. Like Castruccio, his opposite at Antilles, Shinn is also a former Navy man. His extensive seaplane experience started with a 5-year stint in the Pacific during WWII. For two of those years he was attached to the famous Black Cat Squadron. His crew flew PBYS on low-level missions at night, trying to catch surfaced Japanese submarines unawares.

Revitalized Albatrosses

BOTH AIRLINES could soon be flying the updated Albatrosses if things go well. Grumman started making these airplanes in a 28-passenger configuration in 1947 and by the time production ceased in 1961, 463 had been built. Resorts estimates around 200 flyable Albatrosses are left in the world, now worth about \$125,000 a copy in good condition.

If the Goose and Mallard pioneered seaplane history, then the Albatross is the tireless work-horse and record setter. Collectively, Albatrosses have probably saved more lives at sea than any other airplane in aviation history.

"When everyone else was headed for the hangar, this airplane was out on search and rescue," says Treat, whose fondness for the plane borders on idolatry.

"It can go anywhere and do anything," he says.

Resorts' special fancy for the Albatross began in 1974 when it acquired Chalk's, which owned one. The airline's previous owners had bought the airplane hoping to get it certified for commercial use, but had given up on the project. Resorts didn't know what to do with it, and at one point reportedly considered converting it to a firebomber.

Norman H Golden, a former Pan Am engineer, was called in to help decide. On his recommendation Resorts decided to take a chance and pursue recertification, though it would be expensive.

"We encountered a mountain of technical problems," says Golden, "problems that Grumman didn't deal with in the beginning."

It took five years, but in April, 1980, the Albatross was type certificated as the G111. More than 1500 pounds of avionics were replaced with new, lighter communications, navigation and radar systems. The interior and cockpit were completely redesigned and equipped. Both Curtiss-Wright R-1820-82 engines were completely revised to civilian standards, developing 1475 hp on takeoff and 1275 max continuous hp. They were also fitted with mufflers to conform to Part 36 noise standards.

A major hangup in the conversion was the replacement of aluminum spar caps prone to severe corrosion. Because of this problem the US Navy,

Chalk's Chief Pilot Paul Allen with Turbo Mallard



primary user of the Albatross, had placed an 11,000 hr life limit on the plane for military use, which translates into about 6,800 hrs commercial time. Had not man gone to the moon, the spar cap problem would have stopped the project cold.

As it turns out, Grumman engineers had worked with special titanium alloys for use in the lunar landing program, and were able to put their knowledge of this special metal to use. They developed new corrosion-resistant titanium spar caps for the Albatross—welding them in place with an electronic beam process. This technical breakthrough stopped the corrosion problem—and gave the Albatross a new lease on life.

When recertification seemed assured Resorts quietly began collecting Albatrosses from around the world. To date, they own 12, including five used by the Japanese Maritime Safety Agency under a lend-lease agreement with the US. Because of its investment, Resorts has a virtual patent on converting the planes, with Grumman paying the company a royalty for each one it re-builds for other operators.

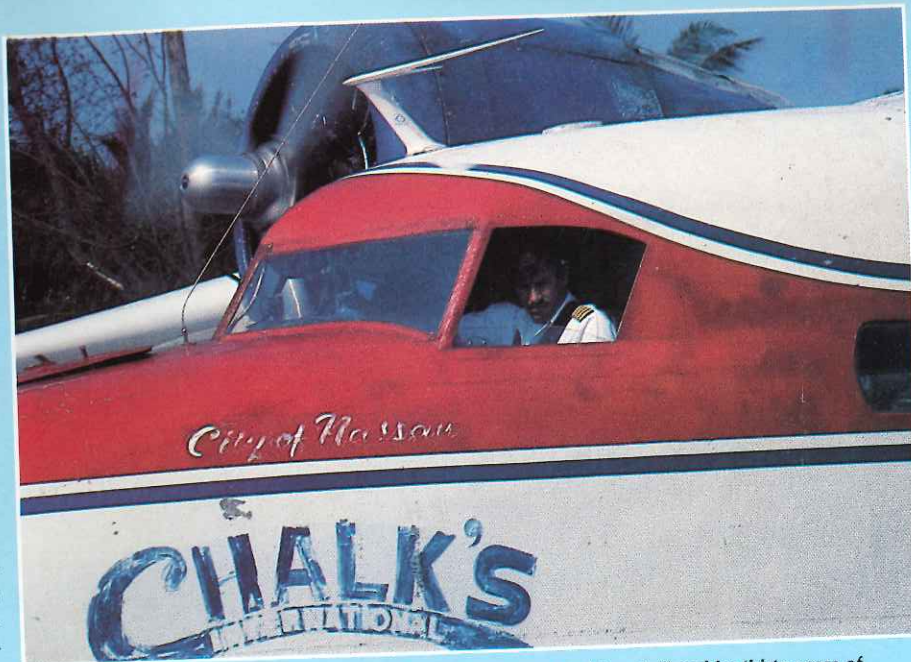
Golden and Treat are convinced there is a big demand for these planes, especially in heavily populated island communities where runways are non-existent, inconvenient or too costly to maintain.

Grumman seems to agree, for it is now setting up a separate division in St Augustine FL exclusively for Albatross conversions. Recently it bid on 40 surplus military models of the amphibian stored at Davis-Monthan AFB.

The possibilities of new routes and special service has also been discussed by Resorts. G111 flights from New York, Baltimore and Philadelphia to Atlantic City NJ, where Resorts owns a hotel and casino, are a possibility. Flying passengers to DisneyWorld and landing on the theme-park's lake was also proposed, but rejected by DisneyWorld.

Antilles, with the larger potential market, is a logical recipient of the new G111. Castruccio admits he must double the number of passengers Antilles is now carrying to make a profit but estimates his airline will earn a 75-80% share of the St Thomas-St Croix market by 1981. The Albatross would be used on longer stage lengths during peak periods.

"This could be the premier airline of the Caribbean and that's my goal," he says. "I can visualize Albatrosses



Weatherbeaten exterior of Chalk's Mallard testifies to wear and tear inflicted by thirty years of use, most of it near salt water.

taking people from the Virgin Islands right to the front of their hotels in San Juan."

There is good market potential in Chalk's Bahamas routes as well, and plans are already underway to modify the Chalk's ramp in Miami to accommodate the Albatross.

Pappy Chalk's air boats

OF THE two seaplane operations, Chalk's is the most enduring and least troubled. Considered the world's oldest scheduled airline, it was started in 1919 by a Kentucky garage mechanic

named Arthur Burns Chalk, later known as "Pappy."

Inspired by a French flier who landed in his backyard with engine trouble, Pappy moved to Miami and set up shop with one amphibian and a beach umbrella at the foot of downtown Flagler Street. In 1926, he moved the operation to nearby Watson Island where he ferried bootlegger and revenue alike. He managed to keep his hand in the airline's operation through a succession of new owners, the last being Resorts.

Pappy's commercial license was still active when he retired at 76 with 16,800

Rebuilt Pratt & Whitney radials await installation at Antilles St Croix maintenance facility.

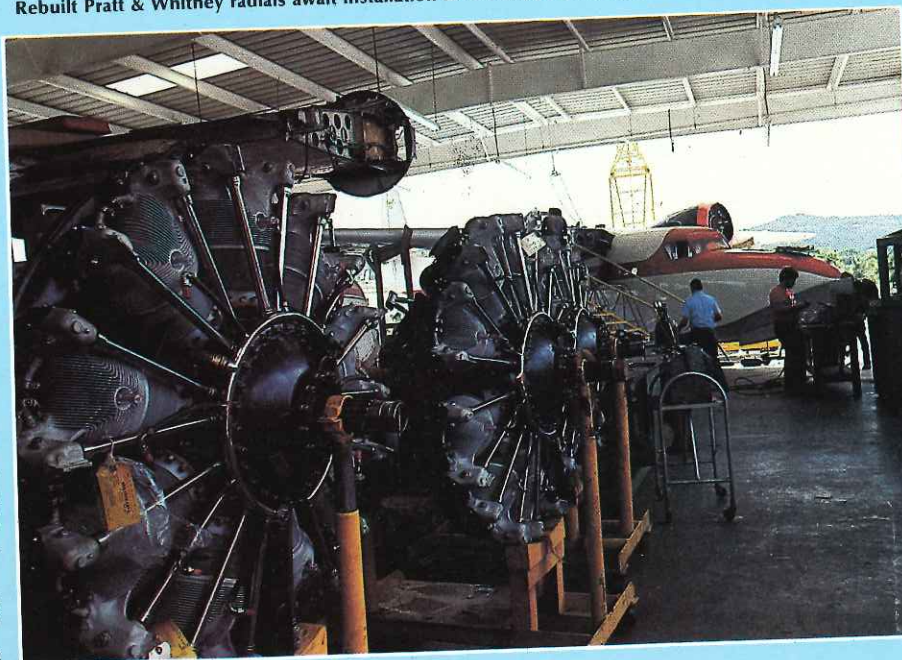


Photo by Murray Smith



Its two Curtiss Wright R1820-83 radials developing almost 1500 hp for takeoff, prototype G111 Albatross leaves a rainstorm of spray in its wake during performance trials last year. If business warrants, both Chalk's and Antilles might be adding G111's to their fleets in 1981.

hrs logged. He suffered a fatal crash falling out of a tree he was trimming at age 88.

Like Pappy, the airline he founded is a long-time survivor. The airline's safety record remains unblemished, with no injuries to a passenger in the more than 60 years of scheduled service. The only casualty occurred in 1972 when pilot Jim Cauthren was shot three times in the legs by a skyjacker he refused to take to Cuba. His co-pilot finally did.

Although their recip Mallards fly a leisurely 150 miles per hour or less, Chalk's delivers passengers to Nassau 30 minutes faster than the other airlines because its seaplanes land "downtown." It holds a monopoly on this service as well as routes to Bimini and Cat Island. While there is an airstrip on North Bimini, the town is on South Bimini and there has been no scheduled land-air service for months.

Thus, it is possible for Chalk's to make money shuttling sportfishermen, tourists, natives and freight on its nine daily flights from Miami to Bimini, and the gamblers, tourists and businessmen on its five daily flights

from Miami to Nassau. In March 1980, Chalk's carried 7,000 passengers, a record, and in 1979 the airline boasted a 97% completion rate, a fair accomplishment for a commuter which flies only under VFR conditions.

Like Antilles, Chalk's sells convenience. The world's oldest scheduled airline offers the smallest, and probably the fastest, port of entry into the United States. A Customs official mans a prefabricated facility a few feet from where the Mallards roost on Chalk's ramp, and passengers are through formalities and into their autos five minutes after de-planing. Parking is free.

But now Chalk's faces a serious threat—from the City of Miami. It has been considering turning Watson Island, homebase of Chalk's operations, over to developers who want to build a theme park.

Resorts has taken a low profile in the controversy and while plans are underway to modify the ramp for the coming Albatross and replace all Mallard recipis with turboprops, there is concern that the theme park plan could go through, gravely altering Chalk's future.

Grumman G111 Albatross

Wingspan	96.66 ft
Length	62.75 ft
Height to top of fin	25.85 ft
Landing gear tread	17.66 ft
Cabin length	26.17 ft
Cabin width	7.40 ft
Cabin height	6.33 ft
Baggage area	280 cu ft
Empty operating weight	22,500 lbs
Max takeoff weight, land	30,600 lbs
Max takeoff weight, seat	30,800 lbs
Max landing weight, land/ sea Part 36	30,400 lbs
Payload	8300 lbs
Fuel	3972 lbs
Endurance	7.5 hrs
Cruise speed @ 2000 rpm	150 kts
Takeoff run over 50 ft, land	6000 ft
Takeoff over 50 ft, sea	5000 ft
Landing over 50 ft, land	5000 ft
Landing over 50 ft, sea	4500 ft
Rate of climb, two engines, 30,800 lbs	1500 fpm
Rate of climb, one engine, 30,800 lbs	350 fpm
Range	500 nm

"Nobody seems to want this development except the city commission," grumbled one Resorts official.

Indeed, the city fathers ignored the advice of a regional planning council and voted approval of the \$68 million project. This in turn prompted the council's appeal to the state cabinet to bar the project.

Technically, Chalk's does not own the land on which the company's new terminal building rests. But Pappy established his airline on Watson Island long before the state of Florida deeded the island over to the city of Miami, so Chalk's claims squatter's rights.

The future

THOUGH Chalk's has a virtual monopoly to air service at its destinations, Antilles faces strong competition from other commuter carriers.

Both airlines have the usual share of problems a commuter airline faces, plus those generated by the special nature of their operations and the area in which they serve. Responsibility for their continued survival depends largely on the decisions of Resort's aviation experts. The man coordinating these plans for Resorts is Lewis Dymond, National Airlines veteran and former Frontier Airlines president.

Dymond is used to making corporate life or death decisions. When head of Frontier Airlines in the early 60s, Dymond took a hard look at the performance offered by turboprops compared to what he was getting from his fleet of 30 DC3s and Convair 340s. He decided the future was in turboprops—and Frontier switched to Convair 580s, the first US carrier to convert its fleet. It was a risky move—but one Dymond felt was justified, as the more efficient turboprops had been proved

reliable in military applications, and offered Frontier better performance, at lower cost and less downtime. Allegheny and North Central soon followed suit.

Despite the romance of the crystalline blue tropical waters and swaying palms, when it comes down to brass tacks, both Antilles and Chalk's are still for-profit commuter airline operations. And Dymond still has some hard decisions to make to assure their continued survival. But survival is one thing these two seaplane airlines seem particularly adept at, and the management at Antilles, Chalk's, and more importantly Resorts, all agree on one thing. Hard work, the right people and on-time service has helped both airlines turn the profit margin corner. And with a little help from the Turbo Mallard and G111 Albatross there's brighter horizons, not extinction, ahead.



Sunset maintenance at Chalk's Watson Island, Miami terminal

Photo by Howard Levy

