# FEDERAL EXPRESS' BARRIERS TO ENTRY

# 1971-1977

Sydney Tucker Taylor
October 26, 2020

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*"In analyzing deterrence of large-scale entry, two classes of entry barriers may be distinguished. An innocent entry barrier is unintentionally erected as a side effect of innocent profit maximization. In contrast, a strategic entry barrier is purposely erected to reduce the possibility of entry."* (Salop, 1979)

## Preface

*New York City, NY*

This article came out of a May 2018 lecture I gave to the Entrepreneurs' Club, a group formed by members of the MIT Sloan Executive Management MBA program. I had been asked to present an interesting aspect of Federal Express as a start-up. The traditional tales are lost in the fog of war, having been told so many times with so many variations that one's memory no longer separates myth from reality.

On the one hand, the most challenging and difficult issue facing Federal Express during the start-up period was the need to raise substantial capital. Today, one can only marvel at what Fred Smith pulled off. His tenacity, sophistication, instincts, audacity and plain old 24/7 hard work boggles the mind. "No man on earth will ever know what I went through…" Smith told Author Robert Sigafoos in 1983. In retrospect, it makes me feel guilty for having had such fun.

On the other hand, finance is not my long suit. Moreover, these trials and tribulations have been well documented by authors Robert Sigafoos in 1983, Vance Trimble in 1993, and Roger Frock in 2006.

So, I thought about the company's vulnerability at birth. As a fledgling, Federal Express seemed to be a sitting duck for some formidable players: UPS. Emery Airfreight. Airborne Freight. Why didn't they show up? What happened to "kill'em in the crib"? The late Art Bass, COO at the time, observed: "When we started out, Emery could have kicked the crap out of us, but it didn't…"

I concluded that a discussion of the circumstances and strategies that posed difficulties for anyone considering entering the market concurrently with Federal Express would be an interesting one.

Accordingly, I presented the idea to the group and participated in the subsequent discussion. Consequently, it occurred to me that Fred Smith had created formidable barriers to entry. Some of the barriers were designed. Some were a matter of exploiting circumstance. None were by chance. After the session, I began to think more about the subject and decided it would be interesting to drill deeper and perhaps be able to contribute to a fuller understanding of the remarkable early Federal Express story.

# I. BACKGROUND

I have organized this discussion into three groups:

- Building the Barriers
- Growing the Business
- Escaping the Barriers

When one recounts past events and places them in little boxes, it might give a false impression. The organizing principal is tidy, but Federal Express 1971-1977 was anything but tidy. The company's management was groping its way, inventing tactics on the fly, and failing frequently. What kept it from chaos was the common belief in a customer focus. If customer requirements were met to the highest degree possible, shareholders would, eventually, be rewarded.

## A TOE IN THE WATER

The confluence of jet aircraft speed and Large-Scale-Integration resulting in miniaturization of components and parts had set the stage. Two years of hard work had prepared the stage. The operational integrity demanded by the Federal Aviation Agency had been achieved and the company had the required operating certificate.

Federal Express created its first network by selecting a group of cities within a five-hundred-mile radius of its Memphis jury-rigged sorting apparatus -- Saint Louis, Dallas, Kansas City, Atlanta, Nashville, Greensboro, Cincinnati, and Little Rock. Some were originating cities, and some were destination only cities. It had assembled a small sales force, an admixture of corporate aircraft and cargo sales professionals. The team had been pounding the pavement in the selected cities supported by a modest marketing initiative of newspaper and trade magazine ads.

So Federal Express declared itself "open for business" on March 12, 1973.

Many authors have described this event with various perspectives and contrary views. But all agree on two facts: The date and the number "six." Author Vance Kimble describes it as well as anyone:

"On that morning salesmen and agents began calling in from along the network with optimistic predictions. They expected the planes to be pretty well loaded up [which calculates to 600 to 800 packages]. William T. Arthur [Marketing Director] … joined a throng at the Federal Express hangars … standing on the ramp watching the midnight sky for the lights of incoming Falcons … Right after midnight the Falcons swooped in. Their cargo doors were flung open. …. 'It was a bust,' Mike Fitzgerald [VP of Ground Operations] remembers. … In all, the Falcons brought six packages." (Kimble, 1993)

Today, Mike Fitzgerald recalls that "I wanted to be anywhere else!" Many felt the same way. There was many a sad face.

It is important to remember that Federal Express' opening day test preceded the dissemination of *Metcalf's Law* by several years (*"*The community value of a network grows as the square of the number of its users increases*"*). Obviously, Fred Smith realized Federal Express was not a linear business. After all, his thought processes had imagined the concept by comparing the movement of goods to a bank clearing house and a telephone exchange. But the company could only intuit – as opposed to <u>calculate</u> – why it experienced the painful impact of selling an 8-node solution to a 300-node market.[1] Is it possible that the opening day produced a 10% market share? Who knows? Perhaps sad faces should have been grins all around.

In any event, the company faced numerous immediate challenges. It had to develop a one-month plan for relaunching its service in a more favorable light for current and prospective investors by incorporating more and larger nodes (to use post-Metcalf vernacular). It needed to understand more fully the network dynamics that would drive a full deployment of the growing

[1] In 1973, there were approximately 300 cities in the US with population of over 100,000. Today, FedEx and UPS serve virtually all 19,945 incorporated cities, towns, and villages with one-day or two-day service.

aircraft fleet.[2] And, most critically, it needed to pick up the pace on the exhausting effort to raise capital as the company teetered on the edge of failure -- a continuing melodrama that rivalled the last act of *Tosca*.

But Fred Smith had bought time by constructing barriers that removed the threat of competition over the short term.

[2] Charles Brandon was Chief Whiz Kid. He and his team of mathematicians ran hundreds of models of network dynamics. They backed into Metcalf's formula two to three years before Metcalf. (Mason, 1997)

A NEED TO PROTECT THE FLEDGELING

> *"What we're trying to find is a business that, for one reason or another … has this moat around it."* -- Warren Buffett, 1995 Berkshire Hathaway Annual Meeting
>
> *"When we started out, Emery could have kicked the crap out of us, but it didn't…"*- Art Bass (Sigafoos, 1983)
>
> "*…at that stage we could have gotten our brains blown out*" – Fred Smith, referring to 1974 and 1975 (Sigafoos, 1983).

Other than the personal investment of the founder and various friends and family, Federal Express was funded by institutional Venture Capital firms ("VCs"). The effort was led by the estimable Charles L. Lea, Jr. of Newcourt Securities.

Today, the VC business is enormous, having invested $130 billion in 2019. Some 800 firms deploy squadrons of highly trained and eager analysts armed with sophisticated artificial intelligence tools in search of the next best thing. To stay in the game, these firms must constantly refresh their piggy banks. Thus, they aim to cash out over a short period of time, say, five to seven years. "Cashing out" means liquidating the investment through a public offering, a sale to another operating company, or a sale to another investor.

In the seventies, the size of the VC market was smaller, and the tools were mostly limited to spread sheets. The numbers game, however, was played the same way: Count on averaging slightly above a three-times return in three to five years and focus on helping the big winners win big to bend the average ("unicorns" in today's biz-speak).

It's a high-wire act. Of the all the firms constituting VCs' portfolios, 50% return less than what was invested; 35% return one to two times the investment; 10% return two to three times the investment. Only 5% of the firms return three or more times the original investment. (Dean, 2017) Put another way -- 5% of investments make money and 95% are losers. Today, Charles Lea recalls that the return on his firm's investment in Federal Express from a Public Offering was in the range or twenty to thirty times, a major success in any decade or by any measure.

Under this kind of pressure, it is not surprising that the likely five percenters are coddled. Of course, the five percenters are not apparent at the outset, but the attentive and successful VCs see them emerge early on. Any start-up company capable of protecting itself from competitive threats for the first two to three years of the investment cycle becomes an attractive addition to the investment portfolio. It allows the VCs to deal with the "acceptable venture risks" of unknowns such as litigation, criminal indictments, bomb scares, supplier interruptions and weather disasters (which nicely summarizes the Federal Express experience).

## BARRIERS TO ENTRY

> *"When starting a business, evaluating all potential barriers to entry is a crucial step in deciding whether or not to enter a chosen market."* (Shopify, 2020)

Assume a hypothetical entrepreneur appears on the scene. She is a highly experienced and battle-tested CEO with a track record of raising significant capital. Or perhaps she is the CEO of a company with a nationwide established local delivery infrastructure. She too has the bisociative insight of the connection between the movement of small packages and a bank clearing house.

Access to capital is a walk in the park for her. She might choose to purchase large aircraft, McDonnell Douglas DC-9's or Boeing 727's for example. She would, of course, be required to earn a Certificate of Public Convenience and Necessity from the Civil Aeronautics Board ("CAB"). She would need to plan on spending at least four years to earn that certificate, realizing that she would be fought at every turn by a deep-pocketed Airline Lobby. The Air Transport Association would certainly be paying close attention since her economic justification would depend on revenue taken from the "bellies" of its clients. If the certificate was eventually issued, she would be required to file for pre-approval on every route and every rate.

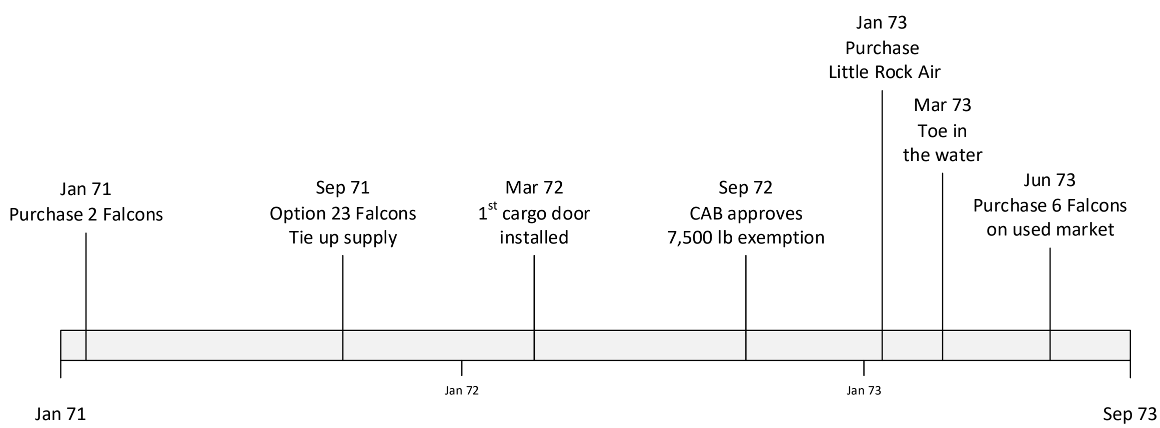
She might consider petitioning the CAB to use DC-9s or similar aircraft that greatly exceeded the payload threshold exemption. She would fail. (The CAB rejected Federal Express' DC-9 petition.)

She would likely conclude that a more practical approach would be to remain exempt from the economic regulations of the CAB by operating a fleet of small aircraft. Her due diligence would lead her to the inevitable conclusion that the only viable aircraft would be the Pan Am Falcon 20. She would soon discover that the entire Pan Am inventory of 23 aircraft carried a purchase option in the name of Federal Express. Entrepreneurs are tenacious, so she might canvas the small used market and approach the corporations and individuals operating the Falcon 20 and convince them to sell to her prematurely (the normal turnover of the Falcon 20 fleet was modest.)

Maybe she would succeed, but her new fleet could not be used in a cargo hauling capacity with the skinny passenger door that was a design feature of the aircraft's Type Certificate. She would be required to replace it with a cargo door. She would track down the owner of the Supplemental Type Certificate authorizing the complex work to be done. That road would lead to Little Rock Airmotive in Little Rock, AR, a company owned by…Federal Express. She would no doubt find herself in line behind a significant backlog of service orders from a very important customer.

## II. BUILDING THE BARRIERS

There were three barriers: The aircraft itself, the aircraft's cargo door, and the ability to remain beneath the cover of Government protection by the Civil Aeronautics Board ("CAB") in a way that was carefully molded to fit the company's operational requirements.



## THE AIRCRAFT

### *Candidates*

First, to perform the hub and spoke mission, the fleet must be made up of jet aircrafts. Speed was needed to provide the required early evening departure from the shipper's city and early morning arrival at the consignee's city in all four time zones. Moreover, the ability to fly above the weather was a key to reliability. Props and turbo-prop aircraft were out of the running.

Second, the structural integrity of the aircraft must be such that the extensive modifications required would not jeopardize airworthiness.

Third, it must be a "small aircraft" (as defined by the CAB) to remain an exempt operation that avoided the procrustean bed.

In other words, a corporate jet.

The Corporate Jet market came of age in the sixties. The market had been established by the Lockheed JetStar in 1959, followed by the Sabreliner in 1963. Both were conversions of military utility aircraft. In 1964 and 1965, the DH-125, the Lear Jet 24 and 25, and the Pan Am Falcon 20 entered service. The fleet was completed in 1967 with the introduction of the high-end Gulfstream II.

It was a land office business. Most of the aircraft had lengthy backlogs. For the Falcon and Gulfstream II, orders could not be filled for at least a year. The decision tree for determining the best candidate for Federal Express' fleet was straight forward.

- Aircraft that were military conversion, the Lockheed JetStar and the North American Sabreliner, had designs dating back to the 50's. The design technology would not withstand the changes required to convert the aircraft into an effective small package transportation vehicle.
- The Learjet 24 and 25, with payloads of less than 3,500 lbs. and less than 6,000 pounds respectively were simply too small.
- The Gulfstream II arrived too late on the scene to have built a sufficient pool of available aircraft.

That left the DH-125 and the Pan Am Falcon 20.

The Falcon 20 was manufactured by the French firm Avions Marcel Dassault While it was a completely new design, the aircraft carried the pedigree of the Mystere, Mirage, and Rafale fighters, all highly regarded for their design creativity and integrity.

Fred Smith was an expert on corporate aircraft. His previous company had brokered sales of various types. Confirming his own opinion of the Falcon 20, he had learned that the French Army had use the aircraft for parachute jumps. The ability to open the door in flight was a strong indicator of fuselage integrity. (Trimble, 1993)

In the early 70's, Dick VanGemert was the chief pilot of Xerox Corporation. He emerged as one of the widely acknowledged thought leaders in the operation of corporate aircraft. He recalls evaluating all the corporate aircraft fleet at the time in conjunction with the consulting firm R. Dixon Speas. “The Falcon 20 clearly out ranked all others with regard to engineering and performance” he recalls today.

One will never know if the DH-125 could have served the purpose. It is likely that its limited cabin cube would have it in second place. The issue became moot, however, because in 1970, the market intervened.

### *The Market Makes the Decision*

The recession of 1969-70 greatly affected the demand for corporate aircraft. The delivery of General Aviation aircraft dropped by 39% from 1965 to 1970. (Riley, 2020) As always, the corporate Jet market was disproportionately affected. Always under the scrutiny of skeptical stakeholders, CEO’s found an easy mark for satisfying cost cuts.

If predictive inventory analytics was even a thing in the sixties, it certainly had not found its way into offices of the corporate jet manufacturers and sellers because backlogs became inventories in a flash.

In early 1971, Federal Express placed an order for two Falcon 20’s. Taking advantage of the drought, the company supplemented that purchase with what became a crucial barrier to entry. Bruce Popp, a Pan-American employee, tells the story:

“In the early 1970s, Popp was working for Pan-American Business Jets, based in Roswell, New Mexico. A French aviation firm, Avion Dessault (*sic*), had teamed up with Pan-American to design and build sleek little luxury jets for business commuters. ‘Well, by the time we got delivery of 35 of those planes,’ says Popp, ‘the market just fell out.’ The company was so desperate to get rid of its surplus inventory that they considered trading one of the airplanes for a taco factory in Mexico, thinking it would be easier to sell the factory than the airplane. ‘But then this Fred Smith fellow comes along and buys the whole lot.’” (Finger 2013)

The new Dassault-PanAm joint venture was in terrible financial shape and faced bankruptcy. Federal Express, as always, was dramatically undercapitalized. Driven by the desperation of both parties and requiring the usual exhausting effort of negotiations with squabbling banks, investors, commercial credit lenders, and with the help of Frank Watson, Federal Express’ able and aggressive attorney, somehow, a deal got done.

On December 17, 1971, Federal Express optioned the right to purchase 23 Falcon 20 aircraft for a total purchase price of price of $29.1 mil.

Barrier number 1 was in place.

## THE DOOR

> *In June of 1956 there was a mid-air collision over Arizona involving a Trans World Airlines Super Constellation and a United Air Lines DC-7 which killed all 128 occupants of the two airplanes. "The collision occurred while the aircraft were flying under visual flight rules in uncongested airspace. Realizing the degree to which civil aviation had outgrown the government's ability to regulate it, in August of 1958, Congress created the Federal Aviation Act which provided for an independent Federal Aviation Agency responsible for civil aviation safety."* (FAA, 2020)

The Falcon 20 had an entry door that was about as wide as a bedroom's and required most people to duck upon entering. This, obviously, would not accommodate the service Federal Express envisioned. The aircraft needed to be changed.

There are three categories of Federal approvals governed by airworthiness requirements:

> Type Certificate: The rigors of gaining certification for a newly designed aircraft are formidable and costly. The time required is measured in years.
>
> Modification: Certain modifications can be made to a certified aircraft that do not impact the original design and thus have no predictable impact on airworthiness. Modifications are not made without the close supervision of the FAA, however. Examples are replacing avionics components or reconfiguring the interior.
>
> Supplemental Type Certificate ("STC"): In instances where a change request is deemed to impact the original design yet fall short of "a whole new aircraft," an STC must be applied for and granted.[3]

The Falcon 20 cargo door was certainly more than a mere modification, but it fell short of becoming a whole new aircraft. In his previous corporate aircraft ventures, Smith had developed a close relationship with neighboring Little Rock Airmotive. He turned to that company in 1971 to do the hard and expensive work of filing for an STC and installing the Falcon 20 cargo door.

It is a sophisticated undertaking. The filing itself is a complicated matter. And then comes the design work, collecting airworthiness data, analysis, ground test and flight test planning. If that all passes muster, one can move to the protype construction, ground testing and flight testing. More submissions, more back and forth. (Beech, 2019)

The first installation of a cargo door in a Pan Am Falcon 20 was accomplished by Little Rock Airmotive in the late Spring of 1972. 28 more were to follow.

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[3] Current events speak to this issue: For whatever reason (no doubt economic and political), Boeing convinced the FAA that the changes to the already certified Boeing 737 that created the 737-MAX impacted the original design, but fell short of "a whole new aircraft." 346 deaths later, many critics place this decision at the heart of the matter (Gelles, 2019)

As it turns out, there are better protections than having a friendly neighborhood vendor owning the STC to the door. In the late summer of 1972, again with the help of Frank Watson, Federal Express acquired Little Rock Airmotive.

Barrier number 2 was in place.

THE PROTECTOR

In June of 1938, President Roosevelt signed the Civil Aeronautics Act "to encourage, develop, and regulate air transportation, for the improvement of mail service, national defense, and foreign and domestic commerce." It had new powers of rate regulation and approving new airline routes. In 1940, the CAA was reorganized into two new agencies: The Civil Aeronautics Board (CAB) to regulate routes and carriers and a Civil Aeronautics Administration Commerce to handle safety certification. "The latter's functions were transferred to the new Federal Aviation Agency 1958." (Living New Deal, 2020).

The regulations allowed some operations to be performed under an exemption. "'Conspicuous among them', according to a 1971 statement by Whitney Gilliland, Vice Chairman of the CAB, 'are those provided by carriers defined in the Board's air taxi regulations (C.A.B., Economic Regulations, Part 298) as commuter air carriers, and performed by aircraft weighing less than 12,500 pounds and officially classified as small aircraft. **The Board has sometimes granted exemptions for use of larger aircraft in special situations.'**" [emphasis added] (Gilliland 1971)

The Falcon 20 weighed 16,600 - 17,000 pounds empty depending on its configuration -- not even close to slipping under the exemption threshold. But the "**special situation**" was the crack in the door. The Part 298 exemption was almost 30 years old. It seemed far more logical to base the restriction on payload for an aircraft in cargo service (and on passenger capacity for an aircraft in commuter or air taxi service).[4]

Fred Smith headed to Washington DC to fight this critical battle. His intent was to have the CAB modernize Part 298 based on payload. The payload threshold, of course, would be higher than the Falcon 20's 6,500 pounds. Smith was well armed:

1. He had moved the company from Little Rock AR to Memphis TN but had been careful to burn no bridges. The company continued its presence in Arkansas with the Little Rock Airmotive subsidiary. Thus, he could count on the support of one of the strongest congressional delegations: John McClellan, chairman of the Senate Appropriations Committee. J. William Fulbright, and Wilbur Mills, chairman of the House Ways and Means Committee from 1958 to 1974, often referred to as the most powerful man in Washington.
2. The move to Memphis added another member to the congressional support team. Senator Howard Baker was a rising star in the Republican Party, on his way to becoming a Watergate icon.
3. Smith carried with him the highly sophisticated computer models created by Chief Whiz-kid Charles Brandon and his team. (Mason, 1997)

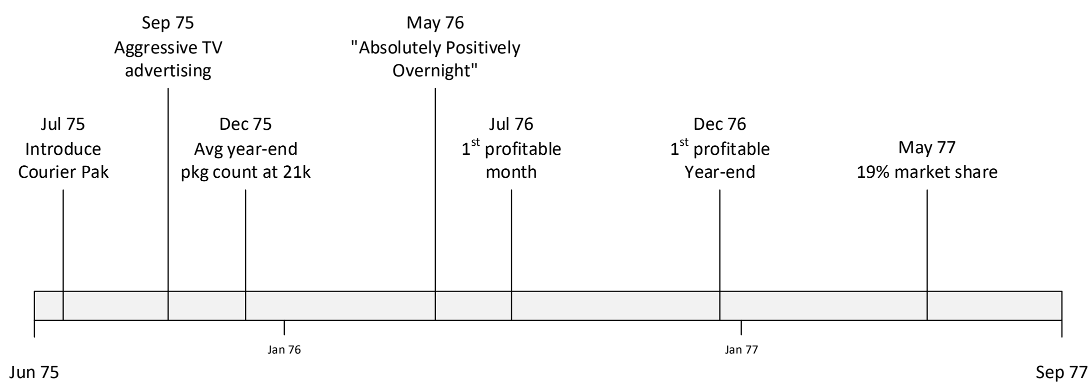
[4] An aircraft's payload is calculated as "Maximum takeoff weight" MINUS "Empty weight including crew" PLUS "Weight of maximum fuel load."

4. The company had retained Nathaniel Breed, a lawyer with Shaw, Pittman, Potts and Trowbridge, the top commercial aviation law firm in the country.
5. And finally, the most important weapon: When it came to U.S. commercial aviation law, Smith had become the smartest person in the room.

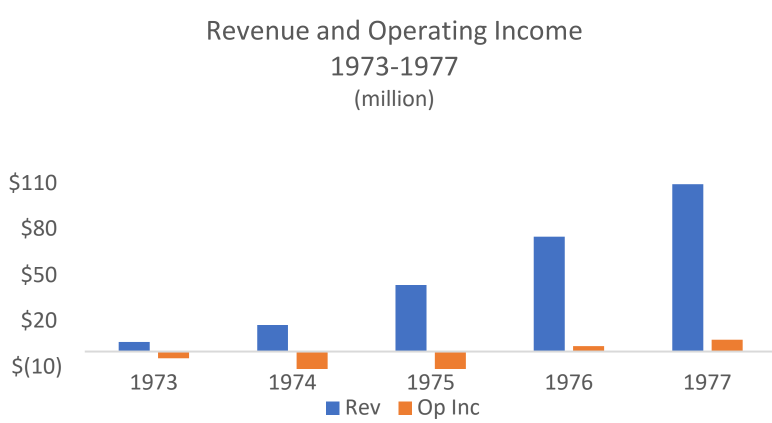
In September of 1972, Smith's logic carried the day. The 30-year old limitation of a 12,500 gross weight was scrapped. The CAB adopted the proposed changes and, thereafter, the exemption was granted to carriers operating aircraft with less than thirty passengers or with a maximum payload under 7,500 pounds.

Barrier number 3 was in place.

## III. GROWING THE BUSINESS




*Some dates estimated based on memory*




*(Sigafoos, 1983)*

## STAYING FOCUSED

The management team, only vaguely aware of the fragile financial and regulatory lifeline to which Smith was clinging, remained optimistic about airline deregulation and, under the leadership of Art Bass, the company made considerable progress.

As Smith suffered the slings and arrows of bankers and regulators, management stayed the course. Fred Smith, Art Bass (COO) and Vince Fagan (VP Marketing) preached a relentless customer focus: Quantify customer requirements and meet them. [5]

Federal Express quickly learned how to run an airline, one good enough to maintain a 95% on-time service level; Mike Fitzgerald supervised a rapidly growing non-union team of enthusiastic and productive couriers; Vince Fagan learned what was going on in prospective customers' heads and created continuous waves of award winning television ads to communicate with them; Charles Brandon created the Command & Control and customer-facing IT tools that kept pace with the growth; And the company launched two new products in 1974 and 1975 to meet customer requirements—Two-day delivery service and Courier Pak.

The average delivery volume, about 10,000 packages per day in 1975, had risen to about 21,000 in 1976, going from six on opening day three years previously, and on its way to nine million worldwide today. (Bartleby Research, 2020) The first profitable year came in 1976, and 1977 was forecast to be over twice as profitable. The company was well positioned for deregulation.

Bass summed up the optimism of management: "(Emery will) have to come into the swamp to fight us – and it's not going to be any contest." (Sigafoos, 1983) Two factors supported Bass' optimism about the outcome of the coming swamp fight:

## MARKET SHARE

In 1970, essentially 100% of the priority package movements in the United States rode in the bellies of passenger airlines. The system was facilitated by a network of domestic air freight forwarders who handled the door to door ground requirements at both ends. Approximately 800 forwarders fed at the trough. Emery Airfreight and Airborne were the major players while the remaining hundreds of participants divided up the leftovers.

But by 1976, Federal Express dominated the air express market for packages weighing less than one hundred pounds, handling an astounding 19% of the parcels. The old leaders, Emery and Airborne, had dropped in this category to 10% and 5% respectively. (Trimble, 1993) It was a precipitous drop in a formally stable history and an important leading indicator.

[5] This customer focus was recognized when the company earned the Malcolm Baldrige Quality Award in 1990.

## BRAND EQUITY

By early 1977, Federal Express had created substantial brand equity, far exceeding the brand equity of prospective competitors.

Vince Fagan wrestled with the challenge of selling disruptive technology. Ignoring the conventional wisdom, Fagan concluded that the audience must be expanded beyond the so-called decision makers who supervised shipping departments. Moreover, he wanted "…to stop using the old-fashioned method of having salesmen call on companies to ask for their business. Instead, Fagan announced, Federal Express should advertise, especially on television." (Reference for Business, 2020) In collaboration with the advertising agency, Carl Ally Inc., Fagan created substantial brand equity in 1975 and 1976 with continuous waves of memorable and highly effective advertising campaigns: *America You Have a New Airline, Twice as Good as the Best in the Business, Take Away our Planes and We'd be Just like Everybody Else,* and, famously, *Federal Express--When it Absolutely, Positively Has to be there Overnight.*

And in the rear-view mirror…

- UPS was publicity shy by design., Its continuing success as an intrastate carrier depended on avoiding attention of regulators. Prior to 1977, the thousands of UPS trucks were painted an innocuous brown, and the UPS logo on the side of the trucks were just barely visible to the naked eye.[6]
- As for the large freight forwards: Federal Express' high level of service and customer satisfaction meant that its customers stuck with them and expanded their use of the service. Because of poor service, the opposite held true for Emery, Airborne, and other freight forwarders. As a consequence, Federal Express' advertising produced a handsome economic return, but for the freight forwarders, there was no desire to waste dollars simply to acquire dissatisfied, short-lived customers.

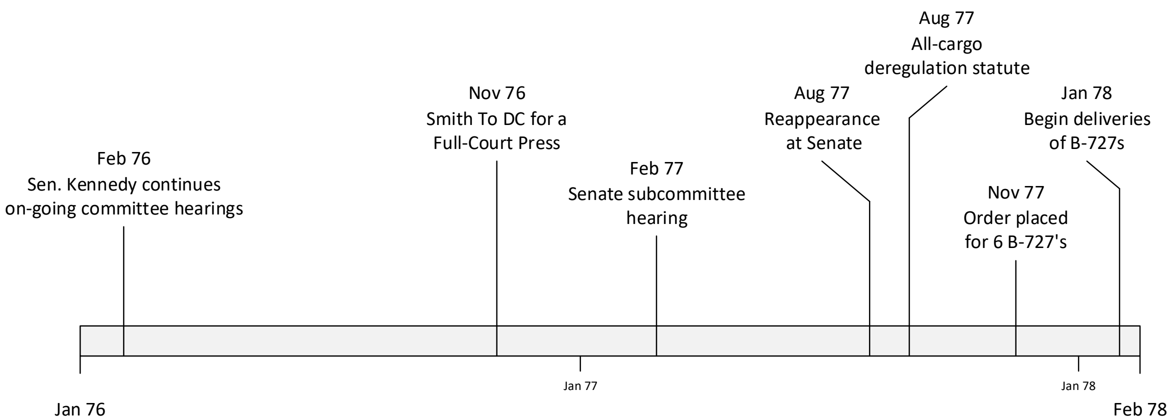
## PROTECTOR BECOMES SUPPRESSOR

To be sure, the growth pressed against the barriers. "Art Bass lamented: 'Falcons are flying wing tip to wing tip over the same routes in the same night, and this is holding back our market expansion and adding terribly to our flight expense.'" (Trimble, 1993).

35,000 pounds of small packages, roughly 1,800 of them, could be carried by five Falcons requiring ten jet engines and ten pilots. If "over the same routes," the load could be carried by one Boeing 727 with three engines and two pilots. The comparison suggests that, while Federal Express may have been a great idea, its current business model was neither scalable nor sustainable.

[6] After deregulation, UPS came out of the closet. The brown remained, but the company began to spend heavily to promote the brand.

# IV. ESCAPING THE BARRIERS



> *"The 95th Congress will be remembered as Jimmy Carter's first. It will also be remembered as the least productive, in terms of numbers of pieces of legislation passed… Yet, it was the 95th Congress that gave away the Panama Canal, created 152 federal judgeships for President Carter to fill, introduced a mild civil service reform act, and promulgated the most significant piece of legislation in the field of transport regulation in the past forty years."* (Dempsey, 1979)

## CAB: ITS OWN WORST ENEMY

The CAB served two masters. Supposedly, it was chartered to protect the public, but in fact, consistent with much of the nation's history of regulation, it was the handmaiden to the airline industry. It served neither well. John W. Barnum, General Counsel, Undersecretary and Deputy Secretary of the Department of Transportation during the period suggests why: (Barnum, 1998)

1. The price of airline travel constantly rose. The CAB cost-plus pricing formula made it inevitable.
2. It was virtually impossible to start a new airline. No new trunk carriers had been admitted since 1938.
3. A cumbersome bureaucracy moved at a snail's pace. Barnum offers two examples: 1) When "World Airways, a charter airline, applied in 1967 to fly a scheduled service between New York and Los Angeles at low prices, the CAB 'studied' the matter for six and a half years and then dismissed the application because the record was 'stale.'" 2) "Continental had to wait eight years to add San Diego/Denver to its system, and finally succeeded only because a U.S. Court of Appeals told the CAB to grant the authority." (Barnum, 1998)
4. Very expensive aircraft were woefully underutilized. "In FY 1974 and 1975 the load factors on the trunks were 55.4% and 53%, respectively. The load factors on transcontinental routes were in the 40s." (Barnum, 1998)
5. The travelling public was aware of the success of Southwest and PSA. Both were unregulated because they only flew intrastate routes. They offered low fares, filled the seats, and turned a profit.

## AN UNLIKELY ALLY

"In 1974, Senator Edward Kennedy of Massachusetts began planning his run for president as soon as 1976, "but the unwinding of the war was taking away the one issue on which Kennedy succeeded in appearing substantive. Without Vietnam, Kennedy had little left but his name. … An attack on the CAB would have a wonderful populist ring, while exposing the labyrinth of federal airline regulation would give Kennedy at least a narrow conservative stripe; he could be seen as a champion of the growing movement to curb the size of big government. And even if CAB wasn't a household acronym like EPA or USDA, Kennedy's subcommittee could get credit for taking on a complex, serious issue." (Petzinger, 1996)

As Chairman of the Subcommittee on Administrative Practice and Procedure, Kennedy proved his well-earned reputation as one of the Senate's most accomplished and effective legislators - The lion of the Senate. "… Sen. Kennedy held extensive hearings as chairman of the committee, pushing deregulation as a way to increase competition and bring affordable air travel to millions of Americans." (McCartney, 2009)

"Howard Cannon of Nevada, the chairman of the Senate aviation subcommittee, supported the CAB and airline industry against deregulation, but was eventually persuaded to switch views in large measure by Sen. Kennedy." (McCartney, 2009) The result was the Senate's Kennedy-Cannon airline deregulation bill which became the complete deregulation of the airline industry in 1978.

BACK TO DC: A FULL-COURT PRESS

The Federal Express website modestly reports that "In the mid-1970s, Federal Express took a leading role in lobbying for air cargo deregulation." (FedEx History, 2020) It was, in fact, a herculean effort.

Facing an existential threat to his company, Smith headed to Washington. Again. This time, "…he took an apartment in Georgetown, leaving COO Art Bass to run operations in Memphis, and began a series of wide-ranging lobbying rounds." (Mason, 1997). He reconvened the team: Charles Brandon and his computer models, Nathaniel Breed, and the Arkansas and Tennessee congressional delegations. By now, Smith had supplemented his encyclopedic knowledge of aviation law with a good understanding of the twists and turns required in the halls of Congress.

The more productive congressional encounters occurred when Smith testified before the Senate Aviation Subcommittee in March of 1977 and again when he reappeared before the subcommittee in August testifying in support of broader regulatory reform. But over the full year's ordeal, most battles were fought and lost – to bitter disappointment. To absolutely no one's surprise, Smith kept plugging. "If you keep working at it, in the last analysis you win." Using one of his favored Vietnam-era metaphors, he added "We're like the old Ho Chi Minh - they've got to kill us a hundred times. All we have to do is kill them once." (Sigafoos, 1983)

"In 1977, a year before adoption of the Deregulation Act, [Kennedy's staff] conducted a kind of **legislative dress rehearsal by pushing through a bill that deregulated air cargo only**." (emphasis added) (Petzinger, 1996) On November 9, 1977 President Carter signed the Domestic Air Cargo Deregulation Statute. Immediately thereafter, Federal Express placed an order for six Boeing 727s.

V. UNSHACKLED

On January 14, 1978, the first of a fleet of six used Boeing 727's arrived on the Federal Express tarmac. United Airlines, the seller, had delivered the aircraft in their cargo configuration and with the arresting Federal Express livery.

The Barriers to Entry had served their purpose.

The aircraft and its door continued with Federal Express for several years in a subsidiary role, serving customers in smaller cities. Today, one can find a Cargo Falcon in the Smithsonian Institute's Air and Space Museum. (See photo page 13)

The protection of the CAB had also served its purpose. The Domestic Air Cargo Deregulation Statute provided the scalability the company required to survive and grow. In 1978, following the passage of that statute, President Carter signed into law the Airline Deregulation Act dismantling the regulatory umbrella which had shielded the industry from a competitive marketplace. It set the stage for a broader movement that transformed trucking, railroads, buses, cable television, stock exchange brokerage, oil and gas, telecommunications, financial markets, and even local electric and gas utilities. (Kahn, 1990)

It was to become a disruptive event. Anyone predicting the implications for the narrow view of the future of air cargo or the broader view of how the world would conduct its business was bound to miss the mark.

Obviously, if it were not for Fred Smith, there would be no FedEx. But there is a subsidiary list of "if not for X there would be no FedEx" made up of people, circumstances, and events. The impenetrable four-year barrier warding off assaults by better financed and better positioned players deserves a spot on the list.

# VI. ADDENDUM

Federal Express Corporation
Selected Consolidated Financial Data
Source: Sigafoos, 1983

| | Yr 1978 | Yr 1977 | Yr 1976 | Yr 1975 | Yr 1974 | Yr 1973 |
|---|---|---|---|---|---|---|
| Operating results | | | | | | |
| Express service revenues | 160,301 | 109,210 | 75,055 | 43,489 | 17,292 | 6,168 |
| Operating expenses | 135,064 | 96,142 | 65,210 | 47,613 | 26,137 | 9,072 |
| Operating income (loss) | 25,237 | 13,068 | 9,845 | (4,124) | (8,845) | (2,904) |
| Other expense | 5,693 | 5,390 | 6,210 | 7,393 | 4,521 | 1,557 |
| Income (loss) before tax | 19,544 | 7,678 | 3,635 | (11,517) | (13,366) | (4,461) |
| Income tax | 6,471 | 3,981 | 2,032 | | | |
| Income(loss) before tax benefit of loss carryforward | 13,073 | 3,697 | 1,603 | (11,517) | (13,366) | (4,461) |
| Tax benefit of loss carryforward | 6,425 | 4,185 | 1,982 | | | |
| Net Income (loss) | 19,498 | 7,882 | 3,585 | (11,517) | (13,366) | (4,461) |
| Financial position | | | | | | |
| Current assets | 30,370 | 20,349 | 14,725 | 9,481 | 7,981 | 8,100 |
| Property and Equipment, net | 71,813 | 53,616 | 55,297 | 59,276 | 59,701 | 51,487 |
| Total assets | 106,291 | 75,321 | 71,229 | 70,193 | 70,697 | 56,771 |
| Current liabilities | 24,315 | 23,276 | 12,954 | 11,818 | 9,136 | 44,949 |
| Long-term debt | 30,825 | 46,229 | 56,186 | 59,892 | 51,605 | 11,522 |
| Common Stockholders' investment | 37,491 | (8,488) | (16,561) | (1,517) | (8,694) | 289 |

Emery Airfreight, Inc.
Selected Income Statement data
Source: Compustat
($ tens of millions)

| | Cost of Goods Sold | Income Before Extraordinary Items | Non-operating Income | Operating Income After Depreciation | Operating Income Before Depreciation | Pretax Income | Sales | Income Taxes - Total | Selling, G&A Expense |
|---|---|---|---|---|---|---|---|---|---|
| 1970 | 84.072 | 5.679 | 0 | 10.685 | 11.201 | 10.685 | 108.13 | 5.006 | 12.857 |
| 1971 | 89.328 | 5.798 | 0 | 10.912 | 11.531 | 10.912 | 114.283 | 5.114 | 13.424 |
| 1972 | 108.808 | 8.268 | 0 | 15.869 | 16.715 | 15.869 | 142.082 | 7.601 | 16.559 |
| 1973 | 134.914 | 10.725 | 1.075 | 18.527 | 19.357 | 19.602 | 173.519 | 8.877 | 19.248 |
| 1974 | 166.742 | 12.544 | 1.186 | 21.404 | 22.433 | 22.59 | 212.124 | 10.046 | 22.949 |
| 1975 | 194.951 | 12.604 | 1.173 | 22.803 | 23.982 | 23.976 | 244.197 | 11.372 | 25.264 |
| 1976 | 240.423 | 15.794 | 1.25 | 29.863 | 31.293 | 31.113 | 303.801 | 15.319 | 32.085 |
| 1977 | 272.564 | 19.033 | 1.981 | 36.904 | 38.396 | 38.03 | 346.786 | 18.997 | 35.826 |
| 1978 | 328.201 | 20.713 | 2.213 | 39.439 | 42.686 | 40.891 | 412.814 | 20.178 | 41.927 |
| 1979 | 417.541 | 22.592 | 2.279 | 39.05 | 43.201 | 40.663 | 517.828 | 18.071 | 57.086 |

Emery Airfreight, Inc.
Selected Balance Sheet data
Source: Compustat
($ tens of millions)

| | Current Assets - Other | Current Assets - Total | Assets - Other | Accounts Payable - Trade | Assets - Total | CapEx -- Tota | Common Equity | Cash & Short-Term Inves |
|---|---|---|---|---|---|---|---|---|
| 1970 | 0.356 | 20.354 | 1.751 | 9.875 | 27.672 | 0.844 | 15.102 | 5.883 |
| 1971 | 0.405 | 25.72 | 1.146 | 13.383 | 32.679 | 0.666 | 17.652 | 7.748 |
| 1972 | 1.026 | 40.169 | 0.353 | 17.698 | 45.716 | 0.226 | 24.484 | 15.379 |
| 1973 | 1.446 | 44.626 | 0.452 | 19.85 | 53.451 | 4.01 | 31.96 | 21.079 |
| 1974 | 1.525 | 43.499 | 0.544 | 23.352 | 64.171 | 3.373 | 38.27 | 14.253 |
| 1975 | 1.518 | 51.544 | 0.494 | 26.252 | 73.922 | 2.135 | 43.672 | 16.47 |
| 1976 | 2.086 | 63.563 | 0.535 | 33.109 | 90.877 | 1.726 | 51.7 | 20.494 |
| 1977 | 3.247 | 68.011 | 0.496 | 35.099 | 96.021 | 4.3 | 54.48 | 19.302 |
| 1978 | 4.138 | 76.45 | 0.575 | 39.633 | 113.267 | 6.657 | 59.035 | 17.769 |
| 1979 | 4.899 | 77.592 | 0.677 | 42.402 | 123.862 | 12.542 | 67.186 | 7.981 |

| | Debt in Current Liabilitie | Long-Term Debt | Current Liabilities | Liabilities - Total | Property, Plant, Equi | Receivables | Stock holders Equity |
|---|---|---|---|---|---|---|---|
| 1970 | 0 | 0 | 11.812 | 12.57 | 5.567 | 14.115 | 15.102 |
| 1971 | 0 | 0 | 14.665 | 15.027 | 5.813 | 17.567 | 17.652 |
| 1972 | 0 | 0 | 21.232 | 21.232 | 5.194 | 23.764 | 24.484 |
| 1973 | 0 | 0 | 21.491 | 21.491 | 8.373 | 22.101 | 31.96 |
| 1974 | 0 | 0 | 25.901 | 25.901 | 10.718 | 27.721 | 38.27 |
| 1975 | 0 | 0 | 30.25 | 30.25 | 11.674 | 33.556 | 43.672 |
| 1976 | 0 | 0 | 39.177 | 39.177 | 11.97 | 40.983 | 51.7 |
| 1977 | 0 | 0 | 41.541 | 41.541 | 12.706 | 45.462 | 54.48 |
| 1978 | 1.083 | 7.268 | 46.964 | 54.232 | 23.883 | 54.543 | 59.035 |
| 1979 | 0.448 | 6.873 | 49.803 | 56.676 | 30.991 | 64.712 | 67.186 |

Airborne, Inc.
Selected Income Statement data
Source: Compustat
($ tens of millions)

| | Cost of Goods So | Non-operating Income | Op Inc After Depreciatic | Op Inc Before Depreciatio | Pretax Incom | Sales | Income Taxes | Interest & Related Expens |
|---|---|---|---|---|---|---|---|---|
| 1970 | 68.185 | 0.208 | 4.159 | 4.969 | 4.138 | 73.154 | 2.138 | 0.229 |
| 1971 | 75.627 | 0.203 | 3.2 | 4.305 | 3.178 | 79.932 | 1.583 | 0.225 |
| 1972 | 84.49 | 0.204 | 2.83 | 3.942 | 2.954 | 88.432 | 1.5 | 0.08 |
| 1973 | 92.769 | 0.332 | 4.041 | 5.258 | 4.301 | 98.027 | 2.125 | 0.072 |
| 1974 | 102.082 | 0.767 | 5.616 | 6.852 | 6.345 | 108.934 | 3.094 | 0.038 |
| 1975 | 105.558 | 0.525 | 6.187 | 7.453 | 6.69 | 113.011 | 3.233 | 0.022 |
| 1976 | 121.466 | 0.666 | 9.869 | 11.416 | 10.535 | 132.882 | 5.384 | 0 |
| 1977 | 136.956 | 0.778 | 11.718 | 13.431 | 12.496 | 150.387 | 6.32 | 0 |
| 1978 | 170.488 | 1.446 | 15.495 | 17.427 | 16.941 | 187.915 | 8.43 | 0 |
| 1979 | 227.366 | 1.835 | 16.329 | 19.013 | 18.164 | 246.379 | 8.639 | 0 |

Airborne. Inc.
Selected Balance Sheet data
Source: Compustat
($ tens of millions)

| | Current Assets | Assets - Total | CapEx | Common Equity | Cash& Short-Term Inves | Debt in Current Liabilities | Long-Term Debt | Current Liabilities - Other |
|---|---|---|---|---|---|---|---|---|
| 1970 | 12.533 | 18.72 | 3.217 | 7.74 | 5.886 | 0.811 | 1.427 | 1.101 |
| 1971 | 14.119 | 20.354 | 0.81 | 9.455 | 5.878 | 0.54 | 0.822 | 1.255 |
| 1972 | 15.382 | 22.51 | 1.458 | 10.074 | 5.777 | 0.387 | 0.502 | 1.2 |
| 1973 | 16.391 | 23.972 | 1.049 | 12.295 | 6.855 | 0.3 | 0.389 | 1.44 |
| 1974 | 20.431 | 28.233 | 1.47 | 14.186 | 10.347 | 0.199 | 0.151 | 1.491 |
| 1975 | 21.523 | 29.864 | 1.923 | 16.216 | 10.011 | 0 | 0 | 1.483 |
| 1976 | 29.684 | 37.997 | 1.623 | 19.711 | 14.956 | 0 | 0 | 2.749 |
| 1977 | 31.054 | 40.864 | 1.921 | 23.634 | 14.928 | 0 | 0 | 2.471 |
| 1978 | 42.014 | 52.742 | 2.984 | 28.768 | 19.286 | 0 | 0 | 3.858 |
| 1979 | 37.155 | 62.734 | 15.872 | 33.986 | 10.622 | 0 | 0 | 4.149 |

| | Current Liabilities - Total | Liabilities - Total | Property, Plant, Equipmen | Receivable | Stockholders Equity | Deferred Taxes & Invstmnt Tax Credit | Income Taxes Payable |
|---|---|---|---|---|---|---|---|
| 1970 | 9.478 | 10.98 | 5.902 | 6.489 | 7.74 | 0.075 | 1.319 |
| 1971 | 10.005 | 10.899 | 6.011 | 8.003 | 9.455 | 0.072 | 0.488 |
| 1972 | 11.877 | 12.436 | 6.839 | 9.352 | 10.074 | 0.057 | 0.762 |
| 1973 | 11.015 | 11.677 | 6.906 | 9.164 | 12.295 | 0.273 | 0.494 |
| 1974 | 13.713 | 14.047 | 7.141 | 9.669 | 14.186 | 0.183 | 1.295 |
| 1975 | 13.29 | 13.648 | 7.798 | 11.02 | 16.216 | 0.358 | 0.605 |
| 1976 | 18.014 | 18.286 | 7.874 | 14.25 | 19.711 | 0.272 | 2.528 |
| 1977 | 17.03 | 17.23 | 8.082 | 15.47 | 23.634 | 0.2 | 2.236 |
| 1978 | 23.659 | 23.974 | 9.134 | 21.88 | 28.768 | 0.315 | 2.932 |
| 1979 | 28.431 | 28.748 | 22.325 | 25.51 | 33.986 | 0.317 | 1.83 |

## About the Author

Sydney Tucker Taylor served as U.S. Navy carrier-based pilot aboard the USS Enterprise from 1960 to 1964. Subsequently, he earned a BA from Yale University.

He joined Federal Express in 1973 as a member of the original management team. He remained for 10 years in various roles including SVP of Sales and Service, Industrial Engineering, and Eastern Division Operations.

Since leaving FedEx, he has advised and served on the board of several transportation and supply chain companies.

He currently serves on the board of SupplyPike, Inc., a SaaS provider of retailer tools designed for suppliers.

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