

## **The Acquisition and Fall of the Schweizer S300**

**Jason Kress**

Penn State University  
Black School of Business, The Behrend College  
Erie, PA 16563, USA  
jkress82@yahoo.com

### **Abstract**

The following is a brief summary of how Sikorsky obtained the Schweizer 300 light helicopter and the life cycle from beginning to end while at Sikorsky. The project was doomed from the beginning and never really had a way to get off its own feet due to many factors such as cost to manufacture, as well as parts received problems. The Schweizer aircraft could have been a great addition to the Sikorsky fleet as Sikorsky was only in the medium-to-heavy helicopter market at the time. The acquisition of Schweizer broke them into the light helicopter market. Yet, this proved to be a failure for Sikorsky due to mismanagement of project cost, administrative practices, team performance, organizational structure, project performance, customer promises, and the techniques of project management used in the acquisition. The major problems associated with the Schweizer S300 were related to not being able to reduce the cost-to-manufacture in order to compete with the growing market.

**Keywords:** Schweizer 300 light helicopter, team performance, project, cost-to-manufacture

### **Introduction and Background**

The company in this case study went through many ownership changes. It began as Keystone Helicopter Corporation but was bought out by United Technologies Corporation. During this time they acquired Schweizer Aircraft, originally from Horseheads, NY, and with it the S300 light helicopter. The S300 is primarily used as a light aircraft trainer for helicopter

pilots. As Sikorsky mainly deals in the medium and heavy aviation helicopter market, this filled the void in the light aircraft sector. Sikorsky, which is located at Coatesville, PA, primarily builds the S76D and the S92 medium and heavy helicopters on the commercial and VIP sectors. Eventually, this was included as part of the package deal through the Lockheed Martin acquisition of the Sikorsky Aircraft.

**Summary of Project** – In 2004 the Schweizer light helicopter programs of the S333 and S300 models were bought by Sikorsky Helicopter Corporation in order to break into the light aviation market. This was done partly to facilitate Sikorsky's goals of progressive innovation in the aviation industry. Since all of Sikorsky's commercial production was at Coatesville, PA, the Schweizer S300 program was moved this location, and the Schweizer plant was closed. Sikorsky had to learn to build the S300 according to old blueprints that needed to be revised. There was also a requirement for Sikorsky to obtain approval for a type certificate from the Federal Aviation Administration in order to begin production.

**Project Cost** – The end budget for the S300 Schweizer program was between \$300k and \$400k, depending on customer-specified options. There was specialized tooling that was needed which was not accounted for in the original budget. The company had to outsource the specialized tooling to be made specifically for the S300 aircraft. This also pushed the delivery date further away due to having to wait for the specialized tooling to arrive. Part of the reason Schweizer was successful with their product was because they were able to keep their employees' labor costs at a much lower rate. Once the program was moved to Sikorsky, the labor rates increased due to Sikorsky employees having higher salaries than Schweizer employees. The cost of living in Horseheads, NY, is actually a bit lower than Coatesville, Pennsylvania, which was another factor to contend with. Due to the S300 being a new product for the workforce at Sikorsky, there was more rework due to mistakes. Sikorsky also had to get the type certificate approved by the Federal Aviation Administration (FAA), which would allow Sikorsky to build the S300 at its Coatesville facility and sell them. Without the type certificate, Sikorsky was still able to build the aircraft, but could not sell them due to safety limitations.

**Administrative Practices** – When Schweizer was acquired by Sikorsky, there was not much substance in the contract other than the selling of the S300 and S333 light aircraft programs. Through the acquisition, Sikorsky decided to close the Horseheads, NY, Schweizer plant and also to lay off the entire workforce at that location. This choice was actually detrimental to the

Schweizer program. The workforce at the Schweizer plant had tribal knowledge on the best way to build these specialized aircraft. These workers were also not requested to join the Sikorsky workforce to aid the S300 program. As the Schweizer workers knew ahead of time of the upcoming layoff, much of the specialized tooling that was needed to build the aircraft efficiently was destroyed as retaliation. Sikorsky Coatesville operations was also going through many changes through layoffs. Meanwhile, Sikorsky had great success with the S76C++ medium helicopter and wished to improve on that. Rather than continuing to produce the S76C++ while waiting for the new S76D to have its type certificate-approved, production on the S76C++ was completely halted, and all focus was put on the S76D and on getting the type certificate approved. Engineering was very focused on this project, as the S76 models were a big portion of Sikorsky's profits. It took three years to complete this project. Due to the Sikorsky Commercial profits being only from the S92 manufacture, there were two layoffs at this time. Also, since the majority of the focus for the employees and management was towards approval of this certificate, there was a lack of focus and resources allowed towards the S300 program. It is clear from this series of events that, had the proper resources and employees been supplied towards the potential success of the S300 program, the project may have turned out differently.

**Team Performance** – Many of the blueprints that came along with the S300 were incomplete or inaccurate, but were still usable due to the tribal knowledge at Schweizer Aircraft. When Sikorsky bought Schweizer, these blueprints came with the sale. Without the tribal knowledge coming along with them, there were many discrepancies. Everything from the way fuel lines were attached, the correct mixture of fuel, as well as engine composition, was incomplete. In order to complete even the smallest tasks on the production of the S300, many engineering changes had to be made. In order to ensure that everything was correct, research had to be done—not only by the workers, but by the engineers as well. Due to this extra research, many deadlines were missed and schedules for aircraft were extended. For each engineering change made on a blueprint, the estimated cost was \$2,000. This included the manpower required to ensure that the required change was the correct one. Due to this the time it took to have the program approved by the Federal Aviation Administration was lengthened; team members became frustrated with all of the problems, and it was clear that the aircraft would be over-budget. Unrealistic expectations were set by upper management trying to please stakeholders. All these could have been handled very differently. The team could have done some research on what was needed in order to successfully

have the type certificate approved by the Federal Aviation Administration (FAA). Then, a presentation could have been made to upper management on what a reasonable timeline would have been, for completion and production. Blueprints could then have been changed to ensure that inexperienced workers would be able to work on the program as well. This could have also lowered costs. The cost of changing the blueprints would be high upfront; but after they were all corrected, the blueprints did not have to be changed again except for a new customer specification. Having a more cohesive team could have increased production and morale which in turn could also have given a sense of accomplishment to the workforce.

**Organizational Structure** - Sikorsky also had their own layoffs within the company. During the production of the S300 at Sikorsky Coatesville operations, there were two layoffs of a significant part of the workforce. This caused a decrease in morale and resulted in many employees seeking their own exit strategy. The S300 program also lost their supervisor as well as their two lead workers who were in-charge of the program. Therefore, the personnel who knew how to work on the S300 had been laid off, similar the workforce at Schweizer. There was no cross-training program for personnel on the aircraft either, which constituted a focal point of failure. The laid-off employees took their acquired knowledge on the program with them without a requirement to train the remaining employees. Employees at Sikorsky were also unsure of their future since their own company was up for sale during this acquisition. After each lay-off many employees were shuffled around to satisfy organizational requirements for the company, and many were put into positions with little experience—such as in the S300 program.

**Project Performance** – There were some high hopes for this project, but as a whole the project was a failure. The original plan was supposed to be fairly straightforward: Sikorsky would acquire the Schweizer programs and add them to the other two types of aircraft they manufactured. This was supposed to be a quick and easy turnaround which would greatly profit the company with its addition into the light helicopter market. This would also further the Sikorsky brand by having new helicopter pilots train on the Sikorsky S300 name. For 6 years the company tried to make a profit on the S300 but failed at breaking even. The S300 was over-budget by no less than \$100k the whole time it was owned by Sikorsky. Each S300 also missed its promised delivery date by at least three months. Since this was a big project and Sikorsky did not want to accept failure, the program went longer than it should have within budgetary guidelines. There should have been a reasonable limit on timeframe considerations on completion of the S300 project. Had these

considerations been in place, Sikorsky would perhaps have saved significant avoidable expenditure.

### **Techniques of Project Management**

The methods that were used in the planning of the S300 project were sub-par at best. As the S300 program was seen as a side project rather than a major project within Sikorsky, it was doomed for failure. Rather than being able to focus solely on the program, the supervisor also was in-charge of some of the other shops in the area. The methods used for estimation of the cost of the project were inadequate, and did not take into account building what would be a new product for workers with no experience on the S300. There was a lack of cost control since the company wanted to see the program's success. It was not until quite a bit of over-spending was done that the program was ended. The lack of planning towards how to actually complete each aircraft in accordance with the authorized blueprint showed a disconnect between management on the one hand, and engineering and workers on the other.

### **Benefits to the Organization and Customer**

The S300 was quoted to the customer at a certain price, always between \$300k and \$400k, depending on the options chosen. As this was also the selling price set by Sikorsky in the contract with the customer, the customer did not lose any money as a result of the contract. What the customer did lose was time on the aircraft due to the aircraft missing delivery deadlines. As far as the organization was concerned, they lost money due to under-budgeting as well as by customers going to their competitors for a quicker turn-around on aircraft needed.

### **Lessons Learned**

There were many options for changes that could have ensured success for this program. The project went over budget by at least \$100k for each aircraft built. This meant that no profit was realized for Sikorsky. Obviously, there should have been more realistic budget considerations. The contract for the Schweizer aircrafts could have included quite a few elements during the acquisition. For instance, the contract could have included a training program for Sikorsky by

Schweizer employees in order to pass on the knowledge of how to build the Schweizer aircraft. Sikorsky could have also kept on staff a few of the employees at Schweizer and moved them to their Coatesville facility in order to facilitate production of the S300. Sikorsky could have also kept open the Horseheads, NY, Schweizer facility with its seasoned employees. The S300 could then have been produced at a lower labor cost since the prior employees would still be working there. The Schweizer employees already had a vested interest in their product and were proud of it. This could have ensured its success. Sikorsky could have then just used the Schweizer programs as cross-training opportunities as well as for profit. Specialized tooling could have been included in the acquisition, with an inventory made of such tooling, along with the correct blueprints. Any changes that needed to be made could have been changed, resulting in a quality product. Of course, there would be a higher cost upfront, but this could eventually have paid for itself since it would increase production and lower costs. As having the correct parts have been a problem, such parts—especially specialized parts—could be ordered ahead of time so that the needed parts would be available in a timely manner for the assembly. This would entail working with purchasing to ensure that parts-lists were released before the work orders. Enough time would then have been available to place orders, rather than everything showing up late, resulting in budget overflows.

### **Conclusion**

In conclusion, there were many factors that contributed to the buying and selling of the Schweizer aircraft. The Schweizer program, namely the S300 and S333 models, were sold by Lockheed Martin after they acquired Sikorsky from United Technologies Corporation. It was then determined that there would be no profit on the S300 due to the labor rates of the workforce, engineering changes that were sorely needed, and lack of tribal knowledge on the aircraft. The Schweizer program which includes some of the prior employees with experience on the S300 was sold to Schweizer RSG in 2018. This was a good move for Sikorsky since the Schweizer program had become a strain on Sikorsky's finances. The company was able to fully focus on development of the S76D and S92 models as they have had great success rates in the past.

### **Acknowledgment**

I gratefully acknowledge the supervisory and editorial guidance by Dr. Victor Sohmen (Project and Supply Chain Management Program, Penn State University, Erie, PA) in developing this paper.

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