The purpose of this report is to analyze the market forces affecting the commercial sector of the helicopter protective coating market. In order to do so, we evaluated the following aspects of the market: market potential, market demand, market growth rate, market development index, and market profitability. Our findings indicate that, while there is potential for LORD to establish a presence in the non-military protective coating market, the Bell 412 platform does not represent a viable opportunity.
Table of Contents

INTRODUCTION ........................................................................................................... 3

MARKET POTENTIAL ................................................................................................. 3

MARKET TRENDS ........................................................................................................ 5

MARKET ATTRACTIVENESS ANALYSIS ..................................................................... 6

COMPETITIVE POSITIONING ANALYSIS .............................................................. 18

CONCLUSION ............................................................................................................. 19

WORKS CITED .......................................................................................................... 21
Introduction

Helicopters in the military market encounter both erosion and corrosion issues, which has resulted in a potentially lucrative market for LORD. LORD recognizes this market, realizing that the commercial market quite possibly experiences similar issues. This report analyzes the commercial coating market attractiveness, and LORD’s potential competitive positioning in the commercial market. Helicopters in this market are used for numerous operations, such as oil & gas drilling, EMS, law enforcement, among others.

We have chosen to focus on the law enforcement industry, which, according to Aviation Today, comprises 15% of the total helicopter usage in the commercial market. In order to specify our findings, we decided to concentrate our efforts on the Bell 412 platform. This platform is known for being reliable in extreme climates, and is used for cargo or personnel; this helicopter seats 13 passengers, and 2 crew in the cabin. The Bell 412 has been voted #1 by Bell customers for nineteen years. It is often used for the law enforcement market due to the fact that it is known as, “one of the roomiest, versatile and cost-effective aircraft on the market today.” The two largest and most costly problems the helicopter industry encounters as a whole are erosion and corrosion.

The image above compares the effects of erosion and corrosion on helicopter blades with and without a protective coating. Corrosion is the process of wearing away gradually, usually by a chemical action. Erosion is defined as the gradual destruction of something by natural forces (i.e. sand, water, wind, or ice). The picture below depicts the effects of erosion on a rotor blade, specifically on the leading edge of the blade. The leading edge is the part of the blade that endures the greatest effects of both erosion and corrosion.

Market Potential

We have chosen to evaluate the market potential for the Bell 412 platform, specifically in the context of law enforcement agencies and fire departments. As depicted by the chart below, Bell is the leader in the world helicopter market at with 44% market share. This means that Bell platforms represent a significant opportunity for LORD in the protective coatings market.

The chart above shows the world market share for several major helicopter manufacturers. We specifically focus on the Bell’s platform in law enforcement market to base our calculations on potential size of the coating industry. The numbers are calculated for 2014. Before we calculate the market potential for coating, we need to calculate the number for potentially in use Bell 412 helicopters by the end of 2014. Although the end users we talked to don’t currently use any type of protection other than cleaning the blades frequently, the following are the two main competitors in this current market.
Hontek:
- Hontek currently develops and manufactures sprayable and moldable polyurethane coating for use in protection against water cavitation, rain erosion, sand erosion, and also impact damages.

3M:
- 3M Tape protects against paint, plastics, metals, and composites from sand, rain, and debris damage. It also protects against general wear and abuse (rubbing, chaffing, abrading, scraping, etc.)

An article from the Bureau of Justice Statistics, *Aviation Units in Large Law Enforcement Agencies*, provided us with the numbers necessary to calculate the market potential for Bell 412 in the law enforcement market segment. Below is the formula used in our calculations.

\[ \text{Max Consuming Units} \times \text{Buying Ceiling} \times \text{Purchase Rate} \times \text{Purchase Quantity} \times \text{Average Price} \]

In order to calculate the market potential for the Bell 412, we first need the maximum number of consuming units of helicopters in the law enforcement market. For the law enforcement market, this was identified to be 941 agencies (BJS). The table below taken from Bureau of Justice Statistics explains where this number was derived from.

Next, we identified the buying ceiling for the industry. Research stated that 99% of the law enforcement agencies currently own a helicopter (BJS). Therefore, 99% of the identified 941 domestic agencies currently own a rotary-winged aircraft; in the above graph you see that tribal police is the only agency that does not own a helicopter. With this being said, because 940 of the 941 agencies already own at least one helicopter, the buying ceiling for the law enforcement market would be 99% because this is the percent of buying unit that could buy a helicopter. The next calculation needed is the purchase rate, which indicates how often law enforcement agencies purchase new helicopters. Upon interviewing the NYPD, this number was determined to be .10, which was 1 new helicopter is purchased every ten years (=1/10). Following this, we calculated the purchase quantity or how many helicopters are bought at a given time. We discovered that helicopters were purchased one at a time (BJS). Lastly, the average price of a Bell 412 in 2013 helicopter was found to be $6.7 million (Aircraftcompare). These figures ultimately revealed a market potential of more than $624 million in 2014.

\[ 941 \times .99 \times .10 \times 1 \times 6,700,000 = \$624,165,300 \]

As stated above, this number can also be expressed in units rather than dollars. The same formula
applies, but the average price is dropped from the equation to calculate the number of units.

Max Consuming Units x Buying Ceiling x Purchase Rate x Purchase Quantity

Both of these calculations are useful. However, we found that it was simpler to calculate the market potential in units. Our calculations show that the number of helicopters can be sold in the law enforcement market is roughly 93 helicopters in 2014.

\[ 941 \times 0.99 \times 0.10 \times 1 = 93.159 \text{ units (to be sold)} \]

After calculating the market potential for helicopters in the law enforcement market we must now find the market potential for the erosion coating industry. This was calculated by using market forecast for helicopters in units, 93.159.

Next, we discovered the wear out rate of the blades to be 2.67 years, which was determined through interviews with Miami-Dade County Police and NYPD. If helicopters fly an average of 18 hours per week, they would fly 940 hours a year. We found, through the Bell website, that each blade is supposed to last 2,500 hours before replacement. We then divided 2,500/940, to find that they would replace blades every 2.67 years. Then, we used this number to calculate the wear out rate. This was calculated to be .38, which was calculated by dividing 1 by 2.67. However, the FAA regulates the amount of time a helicopter can fly before it is required to have an inspection. After 300 hours of flight, helicopters are inspected for motor damage, blade damage, and anything else that would make the aircraft ineligible to fly. To calculate the inspection rate, we took 300 hours and divided it by the 940 hours that Bell 412’s fly in a year and got the number .319. We then divided 1 by .319 to get the inspection rate per year, which was calculated to be 3.135.

In order to find the cost of applying the coating, we also needed to determine the average cost for repairs. This was done by find the average salary of a mechanic per hour ($32.00), and then multiplying it by the time required to change the tape for each blade (4 hours). The result was an estimate of $125 to apply the coating for one blade. Lastly, we have to incorporate the cost of the kit used to when repairing the helicopter. This was found on the 3M website that it costs $8,500 per kit for Hontek. Using the formula, we calculated that it costs helicopter operators $27,159.50 per year in labor to put coating on all four blades.

\[(4 \times 32 \times 4) + (8,500 \times 3.135) = 27,159.50\]

Market Trends

Looking at a span of time over the last five years to the upcoming five years, there are no really prominent trends in production or distribution of helicopters. One trend that we were able to identify was a 3.08% increase in market growth over the next five years (PRNewswire). This is likely attributed to
oil rigs that are built in the oceans for drilling, as well as increasing globalization of major corporations where executives need quick travel. According to the table below, the total expenditures for all aircraft in the law enforcement industry for maintenance, purchase, or fueling are about $283 million; however, the table goes on to explain that this number can be cut down into just the agencies that are using helicopters. The cost, according to the table from BJC, per helicopter is $132,000. With 941 helicopters across all law enforcement agencies, that comes out to annual expenditures of $79,728,000 per year. The article goes on to say this can be cut down into the following: maintenance per flight hour for helicopters costs $168 and fuel costs $74.

Within our industry, the two most commonly purchased and repaired pieces of equipment for the helicopters were spotlights to better illuminate the ground and infrared systems with video cameras (BJR). These parts are most easily replaced by the end users. If LORD seeks to venture into the law enforcement industry for helicopters, these pieces of technology serve as the best method of entry. It can reasonably be assumed through this research that the majority of maintenance costs in this industry come from the technology on the helicopter rather than from replacement of the blades. As evidenced above, because there is no money spent on blade maintenance, this furthers allows us to assume that LORD should not get into the coating market within the Bell 412 platform.

**Market Attractiveness Analysis**

In order to identify whether the commercial coatings market is attractive for LORD, we referred to Michael Porter’s article, *Understanding Industry Structure*. Porter’s article discusses the “five basic competitive forces...whose collective strength determines the long-run profit potential of the industry” (1). These five forces are: attractiveness of any market: threat of new entrants, bargaining power of suppliers, bargaining power of customers, threat of substitutes, and rivalry among existing competitors. Therefore, we will discuss these five forces within the context of the commercial coatings market.

The first force that will be analyzed is the threat of new entrants into the commercial coatings market. The threat of new entrants is based on several factors: *supply-side economics of scale, demand-side benefits of scale, customer switching costs, capital requirements, incumbency advantages independent of size, unequal access to distribution channels, and restrictive government policy* (Porter 3-4).

According to Porter, “when new entrants are diversifying from other markets, they can leverage existing capabilities to shake up competition, as Microsoft did when it entered the market for Internet browsers” (2). Consequently, LORD’s entry into the commercial coatings market has the potential to alter the current landscape of the market. Their capabilities in helicopter parts and military coatings give them an advantage, because they are already known for helicopter parts and coatings in the military market. Therefore, LORD will be able to leverage their knowledge of helicopter parts and coatings in the military market when entering the commercial coatings market.
The commercial coatings market is subject to a certain degree of government regulation because all helicopter coatings must be tested and approved by the FAA. Aeroglaze has already been approved by the FAA for the military market and LORD has had other coatings approved for fixed-wing aircraft, so this should not pose a significant entry barrier for LORD. However, it is still a barrier because gaining the FAA’s approval takes time and Aeroglaze is not yet approved for the commercial helicopter market. 3M and Hontek’s coatings have already been approved by the FAA, which puts LORD at a disadvantage. FAA approval is costly, so if LORD pays to have Aeroglaze certified by the FAA then it will present a fairly high exit barrier for LORD.

According to Dr. Bicen, relationships are extremely important in the business-to-business marketing. Because 3M and Hontek are incumbents in the commercial coating market, they have probably established positive relationships with the OEMs to which the coatings are sold. If customers switch to LORD’s products they have the potential to sever those relationships, which they might be reluctant to do. This is classified as a customer switching cost.

We have assigned a weight of 45% to ease of competitor entry because it is equally as important as the number of competitors (these two factors are tied together) and much more important than price rivalry, since this market competes primarily on differentiation. It is important to be able to enter the market without significant costs, but it is also important that new competitors cannot enter too easily. Due to these factors discussed in the paragraphs above, we have assigned an attractiveness rating of 50 to the ease of competitor entry category. There are several barriers to entry to the commercial coatings market, but none of them are insurmountable, especially considering LORD’s contacts within the OEMs and past success with helicopter products.

We assigned price rivalry a relatively low score because it is not very significant in the commercial coatings market. Competition in this market is based primarily on product differentiation. When choosing a product for their helicopters, customers are not going to choose the cheapest product, because lives are at stake. Therefore, they are not going to take risks; they are going to choose the best product for the particular type of erosion regardless of the cost. Hontek’s coating, for example, has been proven to be the most effective for sand erosion, while Aeroglaze has a clear advantage in the rain. In addition to safety issues, there is another reason why the cost of the coating is not important in this market: the helicopter and its blades are exponentially more expensive than any coating on the market. Therefore, the customer is not going to choose an inferior coating in order to save a few dollars when they have already spent so much. This is very attractive to potential competitors because they probably will not have to cut prices in order to compete, thereby sacrificing profits. Consequently, we have given an attractiveness rating of 80 to the price rivalry category. However, if price rivalry were to become a larger factor in this market, then LORD would have an advantage because, according to Ross Zambanini, Aeroglaze will be cheaper than both 3M and Hontek’s products. Furthermore, Hontek produces only coatings so they would have less room to cut prices than diversified companies such as 3M or LORD.
In order for the market to continue to grow, it cannot have reached the point of saturation. Right now there are three main competitors in the commercial coating market: 3M, Hontek, and Hentzen-Axon. There are also several less prominent competitors such as Basf, Kaman, and Edge Aerodynamics. While this is a much smaller number of competitors than some markets, the commercial coatings market is still relatively small. These competitors are all different in regards to size and power. The commercial helicopter market in the United States is forecasted to grow by approximately 3% within the next year. According to a PowerPoint prepared by Frost & Sullivan titled “Global Civil Helicopter Market Growth Dynamics”, the total number of helicopter sold in the law enforcement industry purchased 1800 helicopters in the primary and secondary markets from 2000-2010.

Although end-users can choose the coating that they want to use on their helicopter, their choices are limited by the options offered by the original equipment manufacturers. Some of the most important factors in choosing a protective coating are product quality, service quality, and ease-of-application. Therefore, the buyers will likely purchase the coating that has the best ratings in these categories as proven by empirical data from product tests. Porter states that buyers are considered price sensitive “If the products it purchases from the industry represent a significant fraction of its cost or expenditures” (6). As discussed above, the coatings cost only a minor fraction of the helicopters and blades. The customers in the commercial coatings market are not price sensitive. Any cost-savings that result from purchasing a coating will not come from the price of the coating itself, but from how much the coating can extend the life of the rotor blades, which typically cost around $200,000. Porter also states that buyers have clout if “The industry’s products are standard or undifferentiated” (5). This is not the case with the coatings market because the products are highly differentiated. Therefore, buyer power is weakened. Because of these factors, we have given buyer power less relative importance than market size and equal relative importance to market growth rate. We have rated the attractiveness of buyer power at 80, because the buyers in this market are fairly weak.

In the commercial coatings market, market size is the most important factor to determining the effects of the market forces. We have assigned a relative importance of 40% to market size for this reason. We made this decision based upon the fact that a larger market often offers greater profitability due to increased opportunities for competitors and more customers to sell to. The market size and growth rate are very closely related. The growth rate and market size are rated close to each other, with market size yielding the greatest at 40%. Growth rate was given a relative importance of 35%. As mentioned above, the overall commercial helicopter market is growing at a rate 3% annually, which is a fairly low rate. This is why we rated the attractiveness of the growth rate at 30. The commercial coatings market is an established market, which makes the growth rate less important since there is already a sizeable market in which competitors can earn a large profit.

Porter defines a substitute as a product that “performs the same or a similar function as an industry’s product but by a different means” (6). The threat of substitutes is basically nonexistent in the commercial coatings market because no other products are capable of preventing rotor blade erosion by
“different means”. This increases the attractiveness of the coatings market overall.

Suppliers in the commercial coatings market are fairly powerful. The suppliers in this market meet several of Porter’s criteria for power within the market: (a) “suppliers offer products that are differentiated” and (b) “there are no substitutes to what the supplier group provides” (5). These two factors are both true for the suppliers in the commercial coatings market. This increases supplier power and, as a result, increases market attractiveness as well. There is also another factor from Porter’s article that increased the power of some of the suppliers, but not all of them. Porter states that suppliers are more powerful if “the supplier group does not depend heavily on the industry” (5). This is true for diversified companies such as LORD and 3M, but is not true for Hontek.

We assigned a relative importance rating of 50% to customer familiarity because, based upon our research and the data that we collected it is the most important element of market access. As mentioned above, customer relationships are extremely important in business-to-business marketing and specifically in the commercial coating market. If customers are familiar with a company then they will probably have an established relationship with that company. They are more likely to have used their products before and therefore will be aware of the product and service quality offered by that company. A reputation for quality products is important.

Channel access received the second highest relative importance at 35%. Access to distribution channels is important (but less so than customer familiarity) because it determines customer access to the product. According the Porter’s article, new entrants into a market “must, of course, secure distribution of its product or service...the more limited the wholesale or retail channels are and the more that existing competitors have tied them up, the tougher entry into an industry will be. Sometimes access to distribution is so high that a new entrant must create its own distribution channels” (4). Because 3M and Hontek are incumbents, they have already established their own distribution channels. Therefore, this poses another entry barrier for potential new entrants to the market. Establishing distribution channels will be vital to the success of any new entrant. LORD plans to utilize a MARCOM roll out strategy, meaning that they will establish a sales force partnership with a channel partner. This should allow them to gain channel access with little difficulty. Another option would be to buy out an incumbent such as Hentzen-Axon.

There are several factors that Porter discusses in his article that pertain to the rivalry among existing competitors in the commercial coatings market. One of these forces is “rivals are highly committed to the business but have diverse approaches, origins, and “personalities” (Porter 8). Because the competitors in this industry have highly differentiated products, each one has its own personality. Therefore, there is intense competition between them. Another factor is that “competitors are numerous” (Porter 8). As described above, there are numerous competitors in this market, which will also increase competition and decrease market attractiveness.
The commercial helicopter coatings market has many attractive features. However, the data that we collected from end-users in the law enforcement industry indicates that erosion is not a primary concern for the Bell 412 at this time due to the fact that they typically do not fly in inclement weather. However, it might be possible for LORD to increase demand by educating end-users on the benefits of Aeroglaze. We would still recommend that LORD investigate this market further since there are helicopter platforms in other industries that present a potentially profitable opportunity for LORD in the commercial coatings market.

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<tr>
<th>Very unattractive</th>
<th>Unattractive- Somewhat unattractive</th>
<th>Somewhat attractive- attractive</th>
<th>Very attractive</th>
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<tbody>
<tr>
<td>0</td>
<td>20-40</td>
<td>60-80</td>
<td>100</td>
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</table>

**Market Forces**

<table>
<thead>
<tr>
<th>Relative Importance</th>
<th>Attractiveness Rating</th>
<th>Attractiveness Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>-40%</td>
<td></td>
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</tbody>
</table>

- market size: 50% 75 37.5
- Growth rate: 30% 30 9
- Buyer power: 20% 80 16 62.5 = 25

**Competitive Environment (30%)**

- Price rivalry: 20% 25 5
- Ease of competitor entry: 40% 70 28
- # of competitors: 40% 50 20 53*.3 = 15.9

**Market Access**

- Customer familiarity: 50% 80 40
- Channel access: 35% 50 17.5
- Sales requirements: 15% 40 6 63.5* =
Competitive Positioning Analysis

Cost Advantage (10%):

We have assigned a weight of 10% to cost advantage because it is the least important element of competitive positioning relative to differentiation advantage and marketing advantage. The coating market competes mainly on having differentiation and marketing advantages. This is why cost is not a primary issue when it comes to creating a difference in the competitive business arena.

Variable Cost:

We have assigned a relative importance of 40% to variable expenses, because they are still somewhat less important than marketing expenses are to the product’s success. Cost cutting measures are harder for competitors to imitate, which makes the competitive advantage derived from low costs less sustainable.

As stated in Ross’ notes, LORD’s Aeroglaze will have a much lower cost of goods sold than the products of competitors such as Hontek. This will result in a lower product price, thus passing the savings on to the customers. An additional factor affecting variable cost is the availability of the Aeroglaze coating product. Hontek’s system requires that the helicopter blade be sent back to the OEM or MRO for repairs, Aeroglaze can be repaired in-house. Because these costs are directly related to Aeroglaze and may affect the customer price and expenses, variable costs are much more important than operating expenses. LORD produces a number of aerospace products and it already manufacturing Aeroglaze for the military market. Consequently, LORD benefits from the scope effect in which overall variable costs are lower due to similar manufacturing processes for their products. LORD has earned a score of 85 in this category due to the fact that Aeroglaze does offer cost savings due to its reduced repair costs and the scope effect.

Marketing Expenses:

We have determined that marketing expenses have the most relative importance and have given it a weight of 55%. We have assigned the greatest weight to marketing advantage because, of the three sources of cost advantage, having an advantage in marketing expenses is the most beneficial. According to the data obtained from our calls to end-users, most end-users are not educated on the subject of protective coatings for their helicopter. Therefore, there is a significant learning curve for the market. As a result, the helicopter platforms are responsible
for educating the end-users on both erosion and protective coatings. In order to motivate the OEMs who produce the platforms to educate end-users on the effects of erosion and the benefits of protective coatings, LORD is required to spend time and money and to allocate resources that could have been used for other purposes. LORD may not spend money to hire new sales people for the commercial coating market since they are using the MARCOM rollout strategy, but they will still be allocating time to communicate with the OEMs and time is the most expensive resource.

LORD intends to market Aeroglaze using a MARCOM roll-out strategy. This means that LORD will be using a direct sales force partnership with a channel partner (Ross’ notes). Therefore, LORD’s salespeople will not be educating potential customers on the product; instead, they will bring their channel partner wherever the sales force goes to sell dampers and bearings. This marketing strategy has the potential to save LORD a significant amount of money, because the company will not have to train current its current sales staff or hire additional sales staff in order to sell Aeroglaze. Furthermore, Ross’ notes also stated that LORD maintains internal advertising, training, and development departments that similarly to private contractors. These departments can be focused on any part of the company. This capability not only gives LORD a wide range of marketing capabilities, but also ensures that costs are kept to a minimum. Therefore, we have assigned LORD a fairly high marketing score of 85.

**Operating Expenses:**

We have decided that the operating expense category accounts for only 10% relative importance, because the overhead is distributed over all of LORD’s products and is not directly related to Aeroglaze.

Because LORD is already manufacturing Aeroglaze for the military market, there should be a minimal increase (if any) in operating expenses as a result of this market development. If there was an increase in operating expenses, it would stem from the increased overhead that comes from producing a greater quantity of the product. Furthermore, because LORD does not need to alter the Aeroglaze used in the military market, the company will save money on operating expenses since they will be able to use their current production facilities to manufacture Aeroglaze for the commercial market. As a result, we have assigned LORD a score of 70 in this category.

<table>
<thead>
<tr>
<th>Relative Importance:</th>
<th>Attractiveness Rating (how LORD scores):</th>
<th>Attractiveness Score:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable Cost: 35%</td>
<td>75</td>
<td>26.25</td>
</tr>
<tr>
<td>Marketing Expenses: 55%</td>
<td>85</td>
<td>46.75</td>
</tr>
<tr>
<td>Operating Expenses: 10%</td>
<td>70</td>
<td>7</td>
</tr>
</tbody>
</table>
With the 10% weight we assigned to Cost Advantage, we calculated a total score of 8 for the section.

**Differentiation Advantage (60%)**:

The coating market competes mainly on differentiation, which is why it is rated the highest at 60%. Determining what customers want in the product and the ability to meet those needs with a cost, effective yet extremely high quality product is what will set a company apart from their competition in the commercial coatings market.

**Product Quality**:

In the context of the commercial coatings market, product quality is defined as the product’s ability to prevent erosion of the rotor blades caused by exposure to sand or rain and to make the blade last longer. If the product is of high quality, then customers benefit because they do not have to spend as much time and money replacing their blades if they have the coating. Ross Zambanini stated that the two most important features of LORD’s coating are ease of application and ease of inspection, respectively. Therefore, high quality product should increase the life of the blade (relative to an unprotected blade) and should also allow for fast, easy reapplication. In addition, it should be easily discernible when the product needs to be reapplied. The combination of these factors is what defines a high quality product.

We have determined that product quality is the most important aspect of creating a differentiation advantage, and therefore have assigned it the greatest weight at 65%. There are several reasons why we have assigned such a heavy weight to product quality. The first reason is safety; lives are at risk when flying a helicopter. If the helicopter were to crash, it risks injuring or killing not only its passengers, but also people on the ground. Therefore, it is essential that any product used on the helicopter be of excellent quality to ensure safety. LORD’s coating not only makes the blades last longer, making them safer than they would be without coating, but it also has an even wear out rate. LORD’s coating wears out evenly on the blades, unlike Hontek’s coating and 3M’s tape. An even wear out rate means the weight lost will be even on each blade which will prevent balance issues. Balance issues are important when it comes to safe flying of helicopters so LORD is at an advantage over 3M and Hontek because LORD’s coating wears out evenly. Another reason that product quality is so important is that helicopters and rotor blades are both huge investments. Therefore, customers want the best quality coatings possible in order to protect their investment. High quality products mean less maintenance and, as a result, less time that the helicopter must be grounded to perform that maintenance.

According to information that we received from Ross Zambanini, LORD’s Aeroglaze is more effective at preventing rain erosion than Hontek’s coating. However, Hontek’s coating fares better than Aeroglaze in preventing erosion due to sand. The difference between the capabilities of the two coatings
is not tremendous, though. Zambanini stated, “If Hontek is a 10 in sand, then LORD is an 8 and if LORD is a 10 in rain, then Hontek is an 8.” This data comes from the Wright Patterson Airforce Base. The majority of law enforcement agencies in the United States operate in geographic areas where they encounter rain much more frequently than they encounter sand (if they encounter sand at all). Hontek’s coating also is at a huge disadvantage in rain because it unevenly wears out in the rain. Again there is a huge safety issue when it comes to flying a helicopter with uneven blades and LORD’s product will wear out evenly and provide more safety to the helicopter operators. Therefore, LORD has a definite advantage over Hontek for coatings in the law enforcement industry and law enforcement agencies will find the Aeroglaze offers a much better quality product for their needs.

In addition to its superior performance at preventing erosion from the most common source in the law enforcement industry, rain, Aeroglaze has another advantage over competitors’ coatings. Aeroglaze is applied in two stages: the initial coating, which is gray, and the topcoat, which is black. Therefore, as the black topcoat wears off over time due to exposure to rain or sand, the gray initial coating becomes visible (i.e. ease of inspection). This provides an easy way for helicopter operators, some of which may not be familiar with helicopter coatings, to determine when the coating needs to be reapplied. Easy identification of when the coating needs to be reapplied will prevent erosion that might have occurred if the coating needed reapplied, but the helicopter operator did not recognize it for several weeks after the coating wore off. It will also prevent safety issues that might occur if the blades become unbalanced due to the coating needing to be reapplied in some areas, but not others.

In light of these factors, we have assigned LORD a score of 80 for product quality. LORD’s product is less effective for sand erosion, but as stated above, law enforcement agencies fly primarily in the rain. This makes Aeroglaze an excellent, high quality product for the law enforcement industry.

Service Quality:

Service quality is defined as the ability of the product to have minimal issues after it has been purchased. In this case, that includes recognizing when the coating must be reapplied to the helicopter blade and the ease with which the reaplication may be accomplished. Therefore, in order to provide high quality service, the product must be highly rated in both ease of reaplication and recognizing when the coating must be reapplied. We assigned service quality a relative importance of 45%, which is the second highest rating among the components that comprise differentiation advantage. The reasoning for this is that service quality is an important factor in customers’ choice of coating, but it is significantly less important relative to product quality, which received a weight of 45%.

Our research has shown that competitors such as Hontek and 3M fall short in at least one of the two areas mentioned above. For example, Hontek requires the customer ship the blades back to Hontek in order to have their blades treated with the Hontek coating. It is not possible for the end-user to reapply the coating on their own. This process is both inconvenient and time-consuming. Therefore,
there is a large opportunity cost for shipping the blades back to Hontek even if it is only several days. On the opposite end of the spectrum, 3M’s tape is easy to apply, but it is intricate to remove easily. Furthermore, 3M’s tape leaves behind a residue on the blades that can disrupt the balancing of the blade. Consequently, the removal and reapplication of the tape is very time consuming because maintenance personnel must spend time removing the residue from the previous tape application before they can apply the new tape. If the removal is not thorough then the residue may pose a safety issue due to the unbalanced blades.

LORD’s Aeroglaze addresses and resolves the two issues described above in several ways. First, Aeroglaze significantly reduces the amount of time that the helicopter must be grounded for reapplication of the coating. According to Ross Zambanini, customers contact LORD to purchase a product, LORD can have the product shipped to them within 24 hours. After the customer has received the coating, the application can be in a matter of hours and it requires a mere 24 hours to dry. As a result, the helicopter is removed from service for less than 2 working days. This is extremely important for the law enforcement industry since helicopters are used in life or death situations. In addition to being much faster than competitors’ coatings, Aeroglaze is also much more versatile. The reasoning for this is that, because LORD’s product is a liquid that can be applied much like spray paint, it can easily cover any shape or size blade (i.e. ease of application described by Ross Zambanini in the product quality section). 3M’s tape, on the other hand, comes in a predetermined size and shape. This means that some of the tape might be wasted during each application and it might take more time ensure that the tape covers all of the blade. According to Ross Zambanini, LORD also increases its ease of application by providing online classes and literature that describe the method for applying Aeroglaze. Therefore, LORD gains a tremendous advantage over competitors, because of its quick application time and the ease with which it can be applied. As a result, we have given LORD a high rating of 85 for service quality.

**Brand Image (brand image and status):**

Brand image constitutes the way in which a company and its products are perceived by potential customers. LORD’s brand image is based upon its current product line and service quality.

Brand image has been assigned an importance of only 10% because the primary component of a differentiation advantage in the coatings market is based on product quality, followed by service quality. When considering which coating to purchase for their product, customers are less concerned with a “brand name” than they are with the product’s quality as measured by objective tests and data. Customers also look for high quality service that will enable them to repair their coating quickly and easily. As a result, brand image is of little importance relative to product quality and service quality. Consequently, while a positive brand image will help LORD’s competitive position in the commercial coatings market, it is not the defining factor and will not hinder LORD’s competitive position if brand image is lacking. Brand image is more beneficial when initially entering a new market than having a strong competitive advantage. A strong brand image indicates that the market has a positive outlook on
an existent company and, therefore, will continue to use them in the newly entered market.

LORD has already established an excellent reputation among helicopter OEMs. They are well-known for their high-quality helicopter parts and coatings in the military market. Therefore, they will have a significant advantage when marketing their coating in the commercial coating market due to their reputation among OEMs. Consequently, they will have an advantage relative to competitors such as Hontek, which is not as well known among helicopter manufacturers. Because of these well-established relationships with helicopter OEMs, we have assigned LORD an attractiveness rating of 75. LORD’s brand image is extremely positive among OEMs, to whom we recommend that LORD market aeroglaze in the commercial market.

<table>
<thead>
<tr>
<th>Relative Importance:</th>
<th>Attractiveness Rating (how LORD scores):</th>
<th>Attractiveness Score:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Quality: 45%</td>
<td>80</td>
<td>52</td>
</tr>
<tr>
<td>Service Quality: 45%</td>
<td>85</td>
<td>21.25</td>
</tr>
<tr>
<td>Brand Image: 10%</td>
<td>75</td>
<td>7.5</td>
</tr>
</tbody>
</table>

Given the 60% weight to the Differentiation Advantage, the score for the section is 48.45.

**Marketing Advantage (30%)**:

Having marketing advantage is the second most important aspect of competing in the coating market. Competition serves as momentum to move the industry forward, and without strong leadership and the right channels to distribute their product, a product would be at a disadvantage. Marketing advantage also determines how well-known the product will be and whether it is easy for customers to obtain.

**Market Share**:

In the context of the commercial coatings market, market share is the percentage of the market that each company controls. For example, if 15% of potential customers in the market purchase LORD’s coating, then LORD has a 15% market share in the commercial coatings market.

We assigned market share the lowest importance rating relative to the other components of market advantage, brand awareness and distribution. The reasons for this low relative importance are as follows. Market share is derived from the other two components of marketing advantage, brand awareness and distribution. Customers in the commercial coating market value a high quality product with excellent service quality. Therefore, as long as the company produces a quality coating, they will be able to gain market share. Consequently, while having a large market share certainly aids success in the market, market share can always be gained over time if the company has great product and service
quality with adequate distribution, etc. LORD having a large market share is not a source of competitive advantage, it is rather an outcome of having another source of competitive advantage. Because LORD has not yet entered the commercial coatings market for helicopters, they have an obvious disadvantage in regards to market share. Competitors such as Hontek and 3M has already been competing in the commercial helicopter coatings market for some time and, therefore, control sizable market shares within the coatings market. However, LORD’s Aeroglaze we have determined that LORD’s quality product and service will allow them to gain market share and take market share away from their competitors when they enter the commercial coatings market.

Due to their current lack of market share, we have assigned LORD a 20 out of 100 for this category. Although this is a relatively low rating, because market share has such a relatively low importance compared to distribution and brand awareness, LORD’s low market share should not be a huge impediment. Furthermore, customers in the commercial coatings industry value quality and product differentiation above all else, which will enable LORD to build its market share once it enters the coatings market.

**Brand Awareness:**

Brand awareness is defined as the degree to which customers in your target market are aware of your company and the products and services that it provides. It also indicates whether a specific company is known for quality products. We rated the relative importance in achieving a marketing advantage at 35% because, if customers are not aware of a company and/or its products then they will not purchase it. Therefore, brand awareness is important to gaining a marketing advantage in the commercial coatings market. However, it is not as important as distribution, which received the highest weight in the category of market advantage. This is because, while high brand awareness, like LORD, this means that customers will probably have greater knowledge of the company and what it has to offer, having low brand awareness will not necessarily prevent a company from succeeding in the market. Thus, though brand awareness is important, and LORD, as a company, does have high brand awareness, this does not necessarily mean that they will be successful in the coating market selling Aeroglaze.

According to information that we received from Ross Zambanini, LORD currently has good brand awareness for dampers and bearings in the commercial market. Unfortunately, Ross informed us, LORD is not yet known for coatings in the commercial market. In the future, LORD may be able to leverage its brand awareness in other areas of commercial helicopter market in order to raise brand awareness in the commercial coatings market.

We rated LORD’s current level of brand awareness at 40 because, although LORD is well-known in the commercial helicopter market for dampers and bearings, they are not known for coatings in the commercial market. Therefore, LORD has received this relatively low score in brand awareness since we are assessing brand awareness in the context of the commercial coatings market.
Distribution:

We have defined distribution as the ability of each company to ensure that customers receive their product in a timely manner.

We have assigned distribution a relative importance of 50%, which is the greatest weight given to any of the marketing advantage components. There are several reasons for this decision. First, distribution is the key to success in this industry. Having great brand awareness and a high quality product are both irrelevant if the company cannot distribute their product to customers in a timely manner. Despite the product’s exemplary qualities, customers will seek other products if they cannot obtain a certain product due to a poorly structured value chain. Furthermore, it will be impossible to gain market share if the product cannot be delivered to customers. Therefore, the second reason that we have assigned such a high relative importance to distribution is that, relative to brand awareness and market share, it is the most important factor for marketing advantage.

As discussed earlier in this report, Ross Zambanini stated that LORD is capable of fulfilling customer requests for Aeroglaze within 24 hours. This response time is faster than competitors’ responses times and up to 10 days ensures that customers will have the product as soon as it is needed and is much faster than LORD’s competitors in the commercial coatings market. Recall from the above discussion on service quality that Hontek requires helicopter operators to send their blades back to the manufacturer in order to receive a new coating. That process can take up to several weeks. Consequently, LORD has a significant advantage over the competition in this respect.

LORD is well-known by helicopter OEMs, to whom they will be selling the Aeroglaze product primarily. Therefore, LORD has a built-in advantage with respect to distribution because they already have a number of contacts among the OEMs to whom they will be selling. Having established relationships with the potential customers will allow LORD to more easily distribute its coating to them and to reach a wider customer base. Ross Zambanini also stated that LORD has 90 distribution centers globally, which means that there is likely a distribution center somewhere in the United States that is near the customer.

In addition to this established network through which LORD could distribute its product, they also have the potential to license Aeroglaze to a coating company and/or to buy out a coating company that already has better distribution channels in place (i.e. Hentzen-Axon). By either licensing Aeroglaze to one of these companies and/or acquiring one of them, LORD would gain the access to their contacts and distribution channels, which would lead to many new opportunities for LORD to enhance its distribution capabilities.

We ranked LORD’s attractiveness rating at 30, which is slightly lower than the scores we gave them for both brand awareness and market share. Although LORD has a very quick way to distribute its coating to customers who call and request it and has contacts within the helicopter OEMs, competitors
such as 3M and Hontek have already established more extensive distribution channels specifically for the commercial coatings market since they are currently competing in this market. However, LORD has the potential to improve its distribution score by either licensing Aeroglaze to a coating company with such distribution channels already in place and/or acquiring a coating company through which they can distribute the product more widely (i.e. Hentzen-Axon)

<table>
<thead>
<tr>
<th>Marketing Advantage</th>
<th>Relative Importance:</th>
<th>Attractiveness Rating:</th>
<th>Attractiveness Score:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Share:</td>
<td>15%</td>
<td>20</td>
<td>3</td>
</tr>
<tr>
<td>Brand Awareness:</td>
<td>35%</td>
<td>40</td>
<td>14</td>
</tr>
<tr>
<td>Distribution:</td>
<td>50%</td>
<td>30</td>
<td>15</td>
</tr>
</tbody>
</table>

With the 30% weight for the Marketing Advantage, the score for this section is 9.6.

**Result**

The total Competitive Positioning score, which we calculated by adding the weighted scores from the Cost Advantage, Differentiation Advantage, and Marketing Advantage sections, is 66.05 out of 100. This score indicates that LORD is positioned to be competitive in the commercial coatings market for the law enforcement industry. For example, if LORD would decide to enter into the coating market, the bell 412 would be a good place to start, considering that we have only analyzed a small fraction of the market as a whole, it could potentially end up being a profitable market. The law enforcement industry does not fly in rain, or extreme weather conditions, but this does not eliminate them having erosion problems.

The data we have obtained from law enforcement agencies indicates that law enforcement agencies do not have an erosion problems that require care. Many law enforcement agencies do not fly in extreme conditions. Due to this lack of flight, erosion is not as heavy an issue. Therefore, LORD’s competitive position for this industry could give them and the company would be better off focusing its efforts on other platforms or industries that hold greater potential and for which LORD is better positioned competitively.

**Conclusion**

Based on our research, we did not find an erosion problem affecting the Bell 412 platform. In the law enforcement industry, the helicopters are not flown in bad weather for safety purposes. They are easily substituted for other means of transportation when the weather is not ideal; therefore, erosion on the helicopter blades is not a primary concern of end-users. However, the biggest problem for helicopters in this industry is hangar rash, which is the damage inflicted upon helicopter blades as they are moved in and out of storage. If LORD does get into the coating market with other helicopter platforms, an
opportunity is to target helicopter OEMs because they have more of a marketing advantage with these customers than they would in the end user market.

Our score for Market Attractiveness is 59.95 out of a score of 100. This is saying that, in terms of the Bell 412 platform, the coating market is somewhat attractive for LORD to enter. Our score for Competitive Positioning is 66.95 out of a score of 100. This is saying that LORD’s advantages and strategy may not be as profitable in the law enforcement helicopter industry, more specifically with the Bell 412, than other platforms which have scored higher than a 66.95.

LORD has discovered a great opportunity to profit in the coating market for rotary-winged aircraft. While the Bell 412, one of countless other platforms in the market, doesn’t present the easiest method for entry into the market, quite a few other platforms do. Therefore, it is recommended that LORD adopt a hybrid defensive/offensive strategy. This means that to be successful in the coating market, LORD needs to improve and optimize their competitive position by buying out a company that has a proficient sales force to market the product commercially. LORD should also rebrand the Aeroglaze product for the commercial market and maybe even change the chemical formula to better handle the corrosion issue. By doing these two things, LORD will improve and optimize their position in the coating market. Finally, by targeting the oil/drilling and EMS industries, LORD has the opportunity to address two problems in the market that their product can address. Through doing so, LORD will appeal to the vast majority of OEMs who suffer from erosion and corrosion. LORD has recognized an opportunity in a new market that they can thrive in because of the product they’ve developed to meet the consumers’ needs.

Source: http://www.airliners.net/photo/Los-Angeles-County/Bell-412/1355967/L/
Works Cited


