**Good morning.** For those of you who don’t know me, I am John Churley and I am the President of United Alloys & Metals based in Los Angeles. I have worked in the scrap industry for the past 15 years and since 2002 have focused primarily on titanium and superalloy scrap. United Alloys & Metals has been in business for over 35 years and we have a sister company, Unico Alloys and Metals, which is located in Columbus, Ohio. In addition to titanium scrap, we process all grades and types of Ni and Co alloy scrap as well as a variety of base metals.

**In regards to titanium,** we handle virtually all forms and grades of scrap, which we sort and prepare in a variety of forms such as: bulk weldables, feedstock, crushed chips, cobbles, briquettes and so forth. We supply titanium to all segments of the market- for ingot manufacturing, ferro ti production and as alloying additive for the carbon steel, stainless steel and superalloy industries. We’ll touch on these segments a little more later.

I was asked to assess the scrap market conditions.

**In doing so,** I think it is important to first touch on the roles of the scrap processor. What does a scrap processor really do and why does the industry need us? No, we aren’t just out golfing, but I’m sure at times some of the audience might question if they really do need us!

**The tight supply** conditions and rapid price increases associated with the last cycle led to what would appear to be an unprecedented increase in scrap buy-back programs of various natures. While these programs serve a function, independent scrap processors will always play an important role in the titanium industry- and within the various stages of the industry’s business cycle.

One manner in which we assist the industry is through our expertise in handling titanium scrap. As most of you probably know, full processing and recycling of titanium takes a level of knowledge and experience that only a handful of scrap companies in the world possess. For example, it takes specialized analytical equipment and years of training for sorters to properly grade and qualify titanium scrap for ingot production. This is not only important to the extent that it helps to ensure that the melters are getting the proper quality in their purchased scrap, but it also helps ensure the scrap is being routed to the “proper” consumer segment.
There are three major consumer segments for titanium scrap- ferrotitanium production, alloying additive and ingot production. The processor’s role includes ensuring the maximizing of unit usage. By this I mean that we help ensure that all units suitable for ingot production actually make their way back into that segment. This segment requires the highest quality scrap and the industry can’t afford to lose these units to a lower segment. Similarly, we capture the units that are not suitable for ingot production but are ok for alloying additive and ensure that these units go into the proper additive segment. While virtually all scrap is suitable for ferrotitanium production, it is important to ensure that the higher value units don’t accidentally- or purposely- get consumed by this segment.

Within the business cycle stages our role adapts much as it does in other commodity based industries. Since scrap is really a byproduct, standard laws of supply and demand do not always apply. We can not simply produce more product in a tight market, nor can we produce less in a weak market. And since scrap generation lags production there will always be excess scrap generation on the downside of the business cycle just as there will be scrap shortages (at least in terms of generation) on the upside of the business cycle. In the depressed stages of the cycle when generation is greater than demand, we help provide a market for scrap where there otherwise may not be one. This is a critical role because it is during this stage that there exists the greatest potential for ingot and additive quality units to make their way into ferrotitanium. While this still occurs, the extent to which it occurs is mitigated by the processor. During strong demand and tight supply, the processor releases the excess inventory that built up during the previous cycle and we play a key part in ensuring that as much scrap as possible is pulled into the market and processed for timely consumption.

This chart is not meant to illustrate any particular supply/demand cycle. Rather it is intended to illustrate how the surplus scrap during a weak demand cycle needs to be captured for the future strong demand cycle.

So what is the current situation in regards to scrap supply and demand and where are we going? I can’t cite specific tonnages or volumes- titanium scrap generation figures continue to be a difficult and arbitrary number to pinpoint. Moreover, it is totally impossible to account for current scrap inventories on hand at processors, dealers and generators. These numbers simply aren’t available. Rather, I will try to assess the scenario from a
macro position and in doing so I will draw comparisons from the last cycle of approximately 2000-2007.

**The period** leading up to 2002 included the following factors:

Steel and stainless steel production were relatively flat with a 5 year annually compounded growth rate of less than 2%. This meant a stable and relatively weak demand for ferro titanium and additives.

Titanium ingot production was also relatively flat. The industrial titanium markets had bottomed out and the commercial aerospace market had been weakening. The forecast for commercial aerospace then took a further hit as a result of 9-11. Thus there was a relatively low level of scrap generation.

At the time DLA sponge was still available, but new sponge production was limited and had actually been slightly reduced as a result of the weakened markets.

But at this point there still existed high scrap inventories for most types of scrap- this was that surplus scrap that was still being generated as the industry cycled down.

**The 2002-2004** period was a period of transition and change:

The steel markets took off with annual growth rates in the 6-8% range; this created intense increased demand for ferro titanium and additives.

However during the early part of this period titanium production remained weak, and scrap generation could not keep up with this demand, which resulted in rapid depletion of those existing scrap inventories.

DLA sponge was running out and there was no way for sponge producers to increase capacity quickly. So as commercial aerospace segments started to recover and forecasts became strong, a major scrap shortage ensued and we all know what happened.

I think that we now find ourselves at a point in the cycle that compares roughly to around 2002. Some of the factors are eerily similar to seven years ago, while others are much different.

Although steel demand cooled off in 2008 and 2009, it is expected to rebound and resume it’s more recent high growth rates, with some production forecasts as high as 1.8 billion tons by 2013. In 2008 the worldwide combined steel production was approximately 1.35 billion tons. So if we reach 1.8 billion tons by 2013- or levels close to it- we will again experience the kind of demand increase for ferro titanium and additives that we experienced in 2001-2006. So once again, strong scrap demand for ferro
titanium production will likely lead the cycle. In fact, recently we have seen some signs of improvement from the steel industry- largely attributed to improved automotive demand. This has already resulted in an increased demand for ferro titanium and recent price increases reflect that demand. But it is still too early to say whether this will continue or if this is a short term spike. Commercial aerospace forecasts have remained very strong, albeit with push outs of some of the demand for the new titanium rich aircraft. These factors represent the strong demand side for titanium units and scrap and are similar to the previous cycle.

However, despite the fact that the growth in titanium production has cooled off in the last year or two, there still is very high production relative to the previous cycle. In fact, 2008 levels remained similar to 2007 and 2009 looks to be only about 10-15 percent below 2008. So unlike the last cycle there is still a sizeable scrap supply being generated. And while DLA sponge is long gone, there has been an explosion of additional sponge capacity put on the market. The majority of this additional capacity may not be of aerospace quality; but it should serve to help satisfy the additional demands for industrial grade production, ferro ti and additive markets.

If this holds true, then we would not see the same phenomenon as the last cycle and as demand continues to improve there should be sufficient sponge and scrap to avoid any major titanium unit shortages. There are certainly other variables that can – and will- come into play and we will likely have some short term spikes along the way. And any demand increase will bring along a relative price increase per the laws of supply and demand- especially considering the fact the market has been floating at or near its bottom. But it is my opinion that as the current cycle continues to unfold we will see a much more balanced and reasonable supply situation.

Thank you.
Global Market Assessment for Titanium Scrap

Titanium 2009

Waikoloa, Hawaii
Global Market Assessment for Titanium Scrap
Global Market Assessment for Titanium Scrap

What do scrap processors really do?
Global Market Assessment for Titanium Scrap

• Roles of the Titanium Scrap Processor
  – Knowledge and experience
  – Specialized analytical and sorting equipment
  – Ensure quality for ingot producers
  – Route scrap to proper consumer segment
Global Market Assessment for Titanium Scrap

Total scrap pool

- Ingot production
- Alloying additives
- Ferro Ti production
• Roles of the Titanium Scrap Processor
  – Scrap generation > Scrap demand
    • Provide market for generators (build inventory)
    • Ensure high quality units aren’t lost
  – Scrap generation < Scrap demand
    • Release excess inventory from previous cycle
    • Ensure all possible scrap enters market
Global Market Assessment for Titanium Scrap

Supply/Demand

Supply

Demand

Excess supply

Supply shortage
Global Market Assessment for Titanium Scrap

- Current market dynamics
- Comparisons to previous cycle
  - Similarities
  - Differences
Global Market Assessment for Titanium Scrap

• Pre 2002
  – Combined steel industry production flat
  • 5 year annualized growth rate < 2%
Global Market Assessment for Titanium Scrap

• Pre 2002
  – Titanium production relatively flat - less scrap generation
  – High existing scrap inventories
  – DLA sponge still available
  – New sponge production limited - actually reduced 5-6%
  – Commercial aerospace forecast weak
Global Market Assessment for Titanium Scrap

• **2002 – 2004**
  – Steel productionskyrockets
  • Annualized growth rate almost 7.5%
2002 - 2004

- Titanium production still weak - insufficient scrap generation
- Depleting scrap inventories
- DLA sponge running out
- Sponge producers can’t react quickly
- Commercial aerospace improving
Global Market Assessment for Titanium Scrap

• 2009 forward
  – Strong demand indicators
    • Return to high steel production growth
      – Forecasts of 1.8 billion tons by 2013
      – Annualized growth rates of approximate 6.25%
    • Commercial aerospace forecasts strong
      – High titanium usage in new planes (787, A380)
Global Market Assessment for Titanium Scrap

- 2009 forward
  - Strong supply indicators
    - Strong titanium production
    - Increased sponge capacity
Global Market Assessment for Titanium Scrap

• **Conclusion**
  - Demand for scrap improves in 2010 with greater increases starting 2011
  - Scrap and sponge supply will be sufficient to meet increased demand for units
Global Market Assessment for Titanium Scrap

Thank you for your time!