

Consumables – Material Management and “I have to track that stuff?”

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The world of Government Contract Property and Asset management is a rich diverse environment – with lots of twists and turns. And just when you think you know everything there is to know about it – you learn something new! So, in accordance with our themed issues of the Property Professional this article will cover the Management of Material, i.e, consumables under Federal Government contracts.

Well, what do we mean by “Consumable?” Since it is good to start with a commercial standard versus going into the Government vernacular we should look at the ASTM International Voluntary Consensus Standards (VCS), in this case ASTM E2135-10.¹ It provides us three related definitions:

Consumed, Consumption and Consumption Method.

The actual definitions:

Consumed, *n*—the loss of identity of an item by incorporation into a higher assembly or through use and ultimate disappearance as a known item or substance.

Consumption—(1) the process of incorporating material into an end item or otherwise using it in the performance of a documented business objective. (2) The measurement of actual use of consumable items against planned use.

Consumption method, *n*—a method of accounting for goods, such as materials and supplies, where the goods are recognized as assets upon acquisition and are expensed as they are consumed.²

If we were to expand our search to the word “Consumed” we would find additional uses of the word. ASTM E2135-10 uses the word consumed in the following words/terms:

Bench Stock, *n*—low cost, high usage, non-sensitive consumable material issued to work areas. Quantities of such stock do not normally exceed an amount that would normally be consumed within a 30-day period or as established in the property control system.

Category of material, *n*—a particular kind of goods, comprised of identical or interchangeable units, acquired or produced by a contractor, which are intended to be sold, or consumed or used in the performance of either direct or indirect functions.

Expendable, *n*—property that can be consumed or become scrap as a result of intended use like drill bits and sanding wheels.³

For each of these definitions we could come up with examples of items that in our environment(s) would be considered something that is consumed. The list can be quite large and extensive. But also for each of these words/terms we could probably quibble

¹ <http://www.astm.org/Standards/E2135.htm>

² Ibid

³ Ibid

with their definitions. Take for instance the ASTM definition of the word “Consumed.” It is defined as, “the loss of identity of an item by incorporation into a higher assembly or through use and ultimate disappearance as a known item or substance.” Let’s break this down into smaller components, “the loss of identity of an item by incorporation into a higher assembly....” Think for a minute. Do nuts, bolts, and screws REALLY lose their identity when they are used in a higher assembly? Not really. I can still see them (Normally) and even identify them as nuts, bolts and screws. But the definition is really pointing us to the fact that these items are GOING INTO the next higher level assembly. Second part of the definition states, “or through use and ultimate disappearance as a known item or substance.” Once again certain items come to mind – Gasoline, paint, hydraulic fluid. Quite clearly gasoline is consumed – and disappears. Paint is applied to a surface and is expended – but I can still recognize it as paint – just that it cannot be consumed or used again. So we are asking for the INTENDED APPLICATION of an item in the process of consumption. I will revisit this issue later in this article.

CONSUMABLES UNDER THE FEDERAL ACQUISITION REGULATIONS

Since this article is going to focus on Government property of the Federal government provided to contractors - That means as our point of departure we need to look at the Federal Acquisition Regulations – the FAR.

Definitions

FAR Part 2 is entitled “Definition of Words and Terms. So, this should be the first place we see a definition of the term Consumable. Well, regrettably, no such definition exists in 2.101. Might we find some related terms? The term “Common item” is defined and in the FAR it means, “material that is common to the applicable Government contract and the contractor’s other work.” Ah, there we go – MATERIAL! We all know that MATERIAL is consumed – that is an “a priori” belief. So, let’s look at the definition of Material in 2.101. O.k., hold on a minute – this chase is starting to get tiresome. There is NO DEFINITION of Material in FAR 2.101. Yet, that word is used over 100 times in OTHER definitions in 2.101. Now, I have always been of the belief that if a word applied to the entire FAR – had applicability across FAR Parts – then it should be in FAR Part 2. If it only applied to one FAR Part – then it should be defined in that FAR Part. Don’t know what happened here, but I suppose that the definition of Material would fit better in FAR 2.101 than where it currently resides.

O.k., Doug – so where IS the definition of MATERIAL?

FAR 45.101!

So another little FAR trick – all definitions are found in an “01” section of the FAR.

FAR Part – signifies the first digit or digits before the period, e.g., FAR Part 45!
FAR Subpart – signifies the first digit that FOLLOWS the period, e.g., FAR Subpart 45.1.

FAR Section – signifies the digit or digits that FOLLOW the FAR SUBPART, e.g., FAR Section 45.101.

While the FAR Subsection -- signifies the digit that FOLLOWS the hyphen at the end of a FAR Subpart, e.g., 45.602-1.⁴

Let's head back to FAR 45.101 to see the definition of Material. FAR 45.101 states that Material is, "property that may be consumed or expended during the performance of a contract, component parts of a higher assembly, or items that lose their individual identity through incorporation into an end-item."

The definition breaks material into various uses:

May be CONSUMED,

May be EXPENDED,

May be INCORPORATED.

I consider these as "Qualifiers." To qualify as Material the intended purpose of the item is for it to be CONSUMED, EXPENDED or INCORPORATED! Three qualifiers! If its intended purpose is NOT one of these three – then it probably is NOT MATERIAL!

And then we have the exclusions within the definition. "Material does not include equipment, special tooling, and special test equipment or real property."⁵ Pretty clear on that point.

The definition of material is also found at FAR 52.245-1. FAR protocol again! Definitions applied to contractor SHOULD be included in the clause -- And of course, the definition from FAR 2.101 and FAR 52.245-1(a) read verbatim.

Though we have the definition of Material set forth in these two references there is another aspect that we need to address. Can material be either Government-Furnished or Contractor-Acquired? Once again we need to read some definitions. Let's focus on the Government property clause at 52.245-1 for these definitions:

"Contractor-acquired property" means property acquired, fabricated, or otherwise provided by the Contractor for performing a contract, and to which the Government has title.

"Government-furnished property" means property in the possession of, or directly acquired by, the Government and subsequently furnished to the Contractor for performance of a contract. Government-furnished property includes, but is not limited to, spares and property furnished for repair, maintenance, overhaul, or modification.

⁴ FAR 1.105-2(b)

⁵ There is the potential for property to CHANGE its classification over time DEPENDING UPON ITS INTENDED use. For example, a computer that is going to be INSTALLED, i.e., INCORPORATED into a deliverable end item would be considered MATERIAL. If that same computer was INSTALLED, i.e., incorporated into a piece of Special Test Equipment (STE) – then while it was installed in that STE – it would be a component of that piece of STE! If that same computer was REMOVED from that piece of STE and ended up sitting on an engineer's desk and its INTENDED USE was for word processing or e-mail – then it would probably be Equipment. One type of Property – three different uses for the INTENDED use!

These definitions describe the ORIGIN of the property – who acquired it, where did it come from? And as such material may be either Contractor-acquired property (CAP) of the material classification or Government-furnished property (GFP) of the material classification.⁶

GFP or as
CAP.

This “mental segregation” comes into play later as to some actions contractors may take that DIFFER depending upon whether the Material was Government-furnished or Contractor-acquired! For example, the allowance for a Credit/Debit transaction, or the requirement for a Material Management Accounting System.⁷ Or even the allowance for purchasing or retention of CAP at cost.⁸

REGULATORY REQUIREMENTS:

We have the definitions – so how does all of this fit when talking about “Consumables?” Well, these consumables are driven by OTHER regulatory requirements, i.e., processes and outcomes. I would like to address a number of them! To do this we need to look at FAR 52.245-1(f). Paragraph (f) is entitled “Contractor plans and systems.” It is here that we see all of the processes and outcomes that the Government mandates we address, if they are applicable! In this article the first process we must address is:

Acquisition

Paragraph (f) states, “(i) Acquisition of Property. The Contractor shall document that all property was acquired consistent with its engineering, production planning, and property control operations.”⁹ Let’s break this down into smaller segments of the sentence:

Contractor shall document – establish and Maintain records.

All property acquired – addressed the issue of GFP or CAP ACQUIRED
by the Contractor¹⁰

Consistent with its engineering, production planning, and property control operations – that there are supporting documents showing WHY an item is needed and acquired!

Title under Fixed Price Contracts

That really leads us to another portion of the Government property clause – the portion on TITLE. This can be a lengthy analysis – and as such I am really going to truncate the discussion and deal primarily with CAP under Cost Reimbursement type contracts.

⁶ I am always hesitant to use the abbreviations CAM or GFM because the potential theme and variations for all the classes of property is bewildering. Therefore I prefer to state the ORIGIN of the Property as either CAP or GFP first – followed by the classification, i.e., material.

⁷ DFARS 252.242-7004.

⁸ 52.245-1(j)(1).

⁹ 52.245-1(f)(1)(i)

¹⁰ Generally GFP is “ACQUIRED” through the MILSTRIP system, or it is “pushed” to the contractor by a listing in the contract. CAP on the other hand is specifically “ACQUIRED” by the contractor – going out and ordering it from a vendor or fabricating it – either in house or through an external company.

But just a smidgen regarding Fixed Price (FP) contracts – under a Plain, ordinary FP Contract – nothing special, no special provisions or clauses or requirements – just a FP contract for the delivery of 200 fleurbels to the Government.¹¹ Under this plain FP contract the ONLY ITEM(s) to which the Government has title would be the Deliverable end item(s)!!! Any material acquired by the Contractor – the Contractor has title! Any Special Tooling acquired by the Contractor – the Contractor has title! And Special Test Equipment the Contractor acquires – the Contractor has title! Any equipment the contractor acquires – the Contractor has title! The ONLY item the Government specified in this contract was/were the deliverable end item(s)!¹²

Title under Cost Reimbursement Type Contracts

It becomes a little more difficult under Cost Reimbursement (CR) Type contracts. FAR 52.245-1(e)(3) is entitled “Title under Cost-Reimbursement or Time-and-Material Contracts or Cost-Reimbursable contract line items under Fixed-Price contracts.” It states, “(i) Title to all property purchased by the Contractor for which the Contractor is entitled to be reimbursed as a direct item of cost under this contract shall pass to and vest in the Government upon the vendor's delivery of such property..” This sentence requires some explanation and clarification.

Title to ALL property – pretty simple... ALL PROPERTY. The opening gives the APPEARANCE that the Government has title to ALL PROPERTY ACQUIRED by the Contractor for this contract. That is NOT exactly true – we need to read further!

for which the Contractor is entitled to be reimbursed – Ahhh, that opens up another requirement. Specifically the “Allowable cost and Payments Clause” comes into play – ENTITLED to be REIMBURSED! FAR 52.216-7 is the Allowable Cost and Payment clause – and it incorporates by reference FAR Subpart 31.2 which deals with the Cost Principles! (We’ll talk about those in a moment!)

as a direct item of cost – This phrase addresses the “Charging” of a cost, i.e., direct or indirect. Notice that the Government DOES NOT claim title to property charged INDIRECT – it is concerned here with the Charging of property in a DIRECT FASHION!

The remainder of the paragraph discuss the specific INSTANT IN TIME when the Government takes title, claims title to this acquired property.¹³

Cost Principles – we need to back up for a moment. O.k., so we clarified that under CR Type contract we have title to property charged

¹¹ I don't like widgets so I made up the term fleurbels to see if it ever entered the lexicon.

¹² FAR 45.402 provides explanation of this concept as does the contractual requirement of FAR 52.245-1(e)(2).

¹³ There has been a LOT of discussion in the past that the Government can also claim title to property charged “INDIRECT” because of the sentence structure of the paragraph in the clause, i.e., “Title to ALL OTHER property...” If one were to seriously analyze what is happening in this paragraph it should pop right out to you that there are FIVE INSTANCES where an ACTION occurs – Vendor's Delivery, Issuance, Commencement or Processing, Reimbursement – and lastly, whichever comes first! Paragraph (e)(ii) is not addressing the CHARGING of the property – it is addressing an ACTION occurring with the property, i.e., Delivery or processing or issuance – NOT whether it was charged Direct or Indirect!

DIRECT when the contractor is entitled to the reimbursed for it. FAR 31.20 is entitled “Contracts With Commercial Organizations” is a lengthy FAR subpart as it deals with numerous very specific cost principles including costs of special tooling and special test equipment – but even moreso for this paper – costs of MATERIAL! FAR 31.205-26 provides us guidance for this allowable costs in regard to material.

Some additional definitions that Property Professionals need to be aware of:

Reasonable
Allocable and
Allowable.¹⁴

All of those issue impact WHAT a contractor may acquire -- AND Charge the Government such that the Government takes title. And that includes MATERIAL!

Cost Accounting Standards (CAS) or Generally Accepted Accounting Principles (GAAP).

There is one more regulatory requirement –really two requirements that may come into play: Cost Accounting Standards (CAS) or Generally Accepted Accounting Principles (GAAP). The issue of “entitled to be reimbursed” is not only effected by the Cost Principles we just discussed but also, if the contractor is a CAS Covered contractor by its Disclosure Statement – CASB-DS1 Form (Or CASB-DS2 Form if they are a nonprofit).¹⁵ Or, if they are NOT a CAS Covered contractor – then the issue of GAAP comes into play.¹⁶

In the vernacular – OMG! All we wanted to do was “ACQUIRE” some property – and all of these other concerns arise? Absolutely! And we did not even talk about engineering drawings, blueprints, purchase requisitions, purchase orders or the like! All of those come into play as well to comply with the requirements of FAR 52.245-1(f)(1)(i) under Acquisition of Property.

Consumption

The second process I will cover is “Consumption.” The process of Consumption is embedded under “Utilizing Government Property” along with the processes/outcomes of “utilize,... move and store.”¹⁷ The entire paragraph reads, “(A) The Contractor shall utilize, consume, move, and store Government Property only as authorized under this contract. The Contractor shall promptly disclose and report Government property in its possession that is excess to contract performance.” It is what is embedded within what appears to be a rather simple sentence that drives us to this concept of “Consumption” and “Consumables.” So, I buy material and consume it! Sounds simple to me! Well,

¹⁴ Due to page limitations those definitions will be addressed in other writings!

¹⁵ See Cost Accounting Standards for the Property Manager; by Robert McFarland, CPPM, CF, for an excellent analysis of the applicability of CAS and Government property.

<http://www.npma.org/pages/2011NESPresentations.htm>

¹⁶ GAAP is slowly being replaced by International Financial Reporting Standards (IFRS) also known as the Red Book.

¹⁷ FAR 52.245-1(f)(1)(viii)

there are a few questions that go along with that! Was it (The material) consumed in REASONABLE QUANTITIES? “Wait Doug,” you say, “what does that have to do with anything? We bought material, we used it all! Simple answer!” Well, there is a little more to it than that.

We stated that under acquisition I need to ensure that the acquisitions were “Reasonable, allowable and allocable!” Here we, the Government, and you the contractor under self-assessments have to evaluate whether or not the material – the CONSUMABLES – were consumed in a REASONABLE Fashion.

“Wait a minute Doug – where does it say that?”

Let’s take a look at a few references:

FAR 52.245-1(b)(2) states, “The Contractor's responsibility extends from the initial acquisition and receipt of property, through stewardship, custody, and use until **formally relieved of responsibility by authorized means, including delivery, consumption, expending**...” Emphasis added.

FAR 52.245-1(f)(1)(vii) states, “(C) Unless the contract provides otherwise, the Contractor shall be relieved of stewardship responsibility and liability for property when—(1) **Such property is consumed or expended, reasonably and properly**, or otherwise accounted for, in the performance of the contract, including reasonable inventory adjustments of material **as determined by the Property Administrator**;

So for consumables, i.e., material, it is critical to understand that both the Government Property Administrator and the contractor have a responsibility towards PROPER CONSUMPTION. The “old” and now rescinded DoD Manual for the Performance of Contract Property Administration had, as an appendix, a Consumption Analysis Worksheet – and though the manual is, for all intents and purposes, gone to its final resting place that Appendix is a useful document for performing a consumption analysis in a production environment providing a four step process.¹⁸ What is needed to perform a consumption analysis? It depends upon the environment under which one is working. In a Production Environment consumption rates, including scrap, may be clearly spelled out in the contract or through the contractor’s:

- Material requirements lists (MRLs)
- Bills of materials (BOMs)
- Master production schedules (MPS).

Things of that nature.

In an Overhaul and Maintenance (O&M) environment consumption may be on an “as needed” basis driven by the “IN SCOPE WORK” specified in the contract and “OUT OF SCOPE WORK” disclosed after tear down of the reparable. In a Research and Development (R&D) environment material requirements may be vague and driven largely by an engineer’s individual program requirements, interim engineering drawings or testing parameters.... So the individuals involved with testing “Consumption” have to

¹⁸ You can still find copies of the old DoD Property Manual on the web. For example, <https://cws.auburn.edu/vpr/osp/forms/DOD%20Manual%20for%20Property.pdf>

be well versed in the environment under which they are operating in order to properly perform this type of analysis.

And for this last part I am going to extract material from the “DoD Guidebook for Contract Property Administration.”¹⁹ To test for adequacy, the PA shall review the contractor’s consumption practices for material through the assessment of material requirements and calculations of the actual consumption of material to ensure that material is consumed in reasonable quantities.

Once released from a stock room or other control activity to the consuming area; i.e., shop floor material is considered “work in process.” Work in process (WIP) is defined as material that has been released to manufacturing, engineering, design or other services under the contract and includes undelivered manufactured parts, assemblies, and products, either complete or incomplete. It is interesting to note that this definition no longer exists in the FAR after the 2007 Rewrite - Though the concept is used in numerous locations throughout the FAR and DFARS.

It is also important that the contractor, under the FAR, generally does NOT keep records of the material out on the floor. Why? Because it is WIP. Other agencies and commercial activities DO maintain records of WIP – so it is best to review the contractual requirements, contractor’s procedures and any industry Leading practices or customary commercial practices they may be using. The problem with WIP is if an excessive or unreasonable quantity of material released from stock for the purpose of avoiding record keeping. Releasing material to the floor just to avoid the maintaining of records is NOT a good practice!

Determining Unreasonable Consumption. As a general rule, material consumption is considered unreasonable if consumption exceeds amounts supported by bills of material, material requirements lists, or similar material planning documents (including reasonable mortality or attrition rates). In an overhaul and maintenance environment, reference should be made to material requirements identified in repair analysis documents. In a research and development environment, PAs may have to seek the assistance of Government technical experts such as quality assurance representatives or engineers.

Remedies for Unreasonable Consumption. Unreasonable consumption of Government materials is not considered a property loss under the risk-of-loss provisions. In cost-type contracts where unreasonable consumption is found, the PA shall recommend the Contracting Officer CO consider a cost disallowance action under FAR Part 31 cost principles. In fixed-priced contracts where unreasonable consumption is found, the PA will forward the case to the CO; the CO shall determine whether or not consideration should be requested from the contractor. Unreasonable consumption may also be addressed under the Material Management Accounting System, DFARS 252.242-7004.

¹⁹ https://acc.dau.mil/adl/en-US/511355/file/74700/Property_Guidebook.docx. Note – much of this section was extracted from the Defense Acquisition University (DAU) IND 100 Course presentation materials prepared by the author of this paper. Therefore I do not believe any attribution is required.

The Material Management Accounting System (MMAS)

I have written a number of articles and made a number of presentations regarding the MMAS.²⁰ As a Property and Asset Management Professional you NEED to be aware of and UNDERSTAND this “system.” Though it has been around for a goodly number of years, since 1989, it has, in my opinion, been given short shrift within the property community. That is, scant attention was paid the MMAS until it became one of the six (6) Business Systems under the DFARS.²¹ It certainly involves Government property – Contractor Acquired Property (CAP) of the material classification as defined in FAR 52.245-1. Government furnished property (GFP) is even thrown in there for good measure (Though one has to be VERY careful in “handling” GFP under the MMAS). But it is here we see even more detailed requirements regarding the consumption of material – as the MMAS mixes together CAP with Progress Payments Inventory (PPI) with even contractor owned material. Why is this allowed to happen? To most effectively and efficiently consume MATERIAL where it is most urgently needed regardless of ownership/title so long as the accounting issues (Crediting and debiting of COSTS) are properly allocated, charged and transferred within the same accounting period.

Under the MMAS we again see requirements for:

- The forecasting of Material
- Equitable, Consistent and unbiased costing of material
- Bill of Material (BOM),
- Master Production Scheduling (MPS)
- Valid Time Phased Requirements
- Maintain adequate levels of record accuracy
- Description of transfer of parts and
- Commingling, to list a few.

I cannot detail ALL of the workings of the MMAS in this article I would encourage you to read the information regarding the MMAS cited in footnote 20.

Conclusion

Dealing with consumables, i.e., material and the related aspects including performing a consumption analysis has, well, in my opinion been given short shrift in the property/asset community. It is a VERY DETAILED process and outcome that has many twists and turns. This article is only the starting point for ANY discussion of consumables and consumption. Obtaining a detailed, intimate understanding of the

²⁰ “The Material Management Accounting System or Why hasn’t anyone told property,” available at <http://www.npma.org/Archives/Goetz-90.pdf>. The Presentation entitled “The Material Management Accounting System or Why hasn’t anyone told property, - Revisited,” is available at <http://www.npma.org/pages/2013NESPresentations.htm>. The Article entitled “The Material Management Accounting System is it a Property Function or Not?” is available at <http://government-property.com/wp-content/uploads/2010/01/2013-MATERIAL-MANAGEMENT-ACCOUNTING-SYSTEM-Article.pdf>.

²¹ DFARS 242.70, 252.242-7004, and 252.242-7005.

“simple” act of consumption can require years of study.²² For those of us within the NPMA I encourage you to read and study ALL that you can in this area – it will surely expand the depth and breadth of your knowledge and make you a more valuable employee to your activity – regardless of whether you are Government employee or a contractor or even within a Hospital or University setting! Go out there and learn -- explore the topic further!

TEST QUESTION: For those of you working with DoD Contracts I have a question. If the Material Management Accounting System (MMAS) required by DFARS 252.242-7004 is in your contract – are you allowed to utilize the “Receipt and Issue System” called out in FAR 52.245-1(f)(1)(iii)? If yes, why? If no, why not?

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²² APICS is one of the foremost Professional Educational Associations that offers Certifications in Production and Inventory Management. <http://www.apics.org/careers-education-professional-development/certification>