

TIER-1 DESIGN READINESS SYSTEM

TIER-1 CONCEPT REVIEW



ICAR INITIAL CONCEPT ASSESSMENT REPORT

COMPILED BY:
TIER-1 ENGINEER, LLC

PREPARED FOR:

K. MILLER JUNGLE OUTFITTERS

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PROJECT INFORMATION

REPORT ID ICAR-11-0038	DATE 11/13/2011	CLIENT / COMPANY K. MILLER JUNGLE OUTFITTERS
CLIENT TYPE SMALL BUSINESS	CONCEPT NAME RIFLE KEEPER	
CONCEPT STAGE PRE-PROTOTYPE	CONCEPT DESCRIPTION A RIFLE/SHOTGUN HIP HOLSTER THAT FITS ONTO A BELT, IN ORDER TO RETAIN THE FIREARM IN A MORE FIXED POSITION WHEN USED IN CONJUNCTION WITH A SLING.	
EST. QUANTITY 250 / YEAR		

CONCEPT / DESIGN INTENT
(INTENDED USE)

- BELT-MOUNTED
- RETAIN FOREND WHILE RUNNING
- EASY INSERTION/REMOVAL
- MINIMAL MOVEMENT IN USE
- MINIMAL NOISE
- MUST NOT LOSE RETENTION
- MINIMAL SNAGGING ON GEAR
- TOUGH AND RUGGED
- MUST WITHSTAND HARD USE
- MUST WITHSTAND OUTDOOR USE

INTENDED USER(S)

HUNTERS, HIKERS, MILITARY, SHOOTERS

DESIRED FINISH / APPEARANCE

POWDER COATED - MULTIPLE COLORS

PREFERRED MATERIALS

SPRING STEEL

PREFERRED PROTOTYPE METHOD

NOT KNOWN

PREFERRED MANUFACTURING METHOD

NOT KNOWN

APPLICABLE ENVIRONMENTAL EXPOSURES

INDOOR

HIGH HEAT

WET

DIRT / SAND / DUST

OUTDOOR

COLD

SUBMERGED

MARINE

HEAT

FREEZING

ABRASIVE

CHEMICAL

KEY UNKNOWNs

RETENTION POCKET UNIVERSALITY

RETENTION FORCE NEEDED

FLEXIBILITY NEEDED

TARGET NUMBER OF DUTY CYCLES

EASE OF INSERTION/REMOVAL

MAIN CLIENT CONCERNS

- MATERIAL CHOICE
- RETENTION FORCE
- INSERTION/REMOVAL EASE
- ENVIRONMENTAL DURABILITY
- POTENTIAL NOISE
- PROTOTYPING METHOD

CONCEPT SUBMISSION

FILES / DOCUMENTATION SUBMITTED

- PRODUCT CONCEPT OVERVIEW
- SKETCH: Rifle Keeper V3-ISO.png
- SKETCH: Rifle Keeper V3-PROFILE.png

DOCUMENTATION TYPE

CONCEPT STATEMENT

CAD

SKETCH

PROTOTYPE

2D DIMENSIONED DRAWING

EXISTING PRODUCT

PRIMARY CONCEPT FILE

Rifle Keeper V3-ISO.png

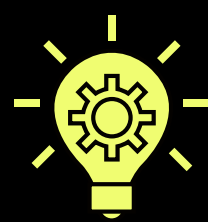
FILE TYPE

PNG

UNITS

IMPERIAL

INITIAL CONCEPT ASSESSMENT



CONCEPT
FEASIBILITY



PROTOTYPE
READINESS



PRELIMINARY
DESIGN FINDINGS

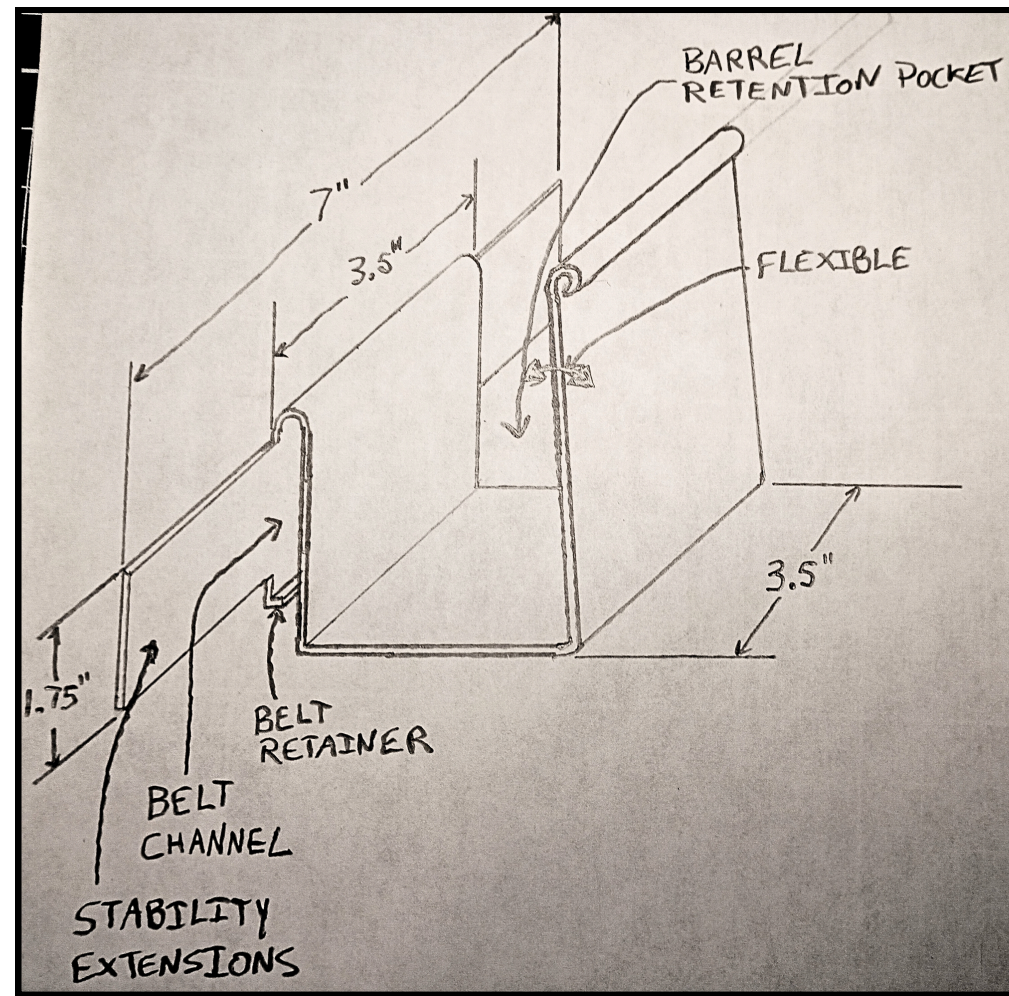
8



PRELIMINARY
MANUFACTURABILITY FINDINGS

4

OVERALL REVIEW COMPLEXITY



CONCEPT DATA CLARITY



REQUIRED MISSING INFORMATION

NONE

CONCEPT REVIEW PROPOSAL

REVIEW SCOPE

STANDARD
CONCEPT REVIEW

EST. LEAD TIME

3-5 BUSINESS DAYS

CONCEPT REVIEW PRICING

\$199

INITIATE PHASE THREE →

Payment in full constitutes approval of ICAR, Review Scope, price, and lead time.

Phase Three will begin after payment and delivery of any **REQUIRED MISSING INFO.**



CONCEPT REVIEW SCOPE OVERVIEW

The Tier-1 Concept Review is a structured early-stage engineering review intended to evaluate a developing product concept before substantial time, cost, or engineering effort is committed to detailed design. Unlike the Design Review and DFM Audit, Concept Review does not use Review Levels. Each project is evaluated during Phase Two to determine whether the submitted information is sufficient for a useful review, what areas require attention, how much engineering effort is expected, and whether any information must be provided before technical review begins.

The approved Concept Review scope is documented in the ICAR and is based on the concept as submitted, the stated design intent, known requirements, key unknowns, available documentation, project complexity, and the specific questions or concerns identified by the client. The Concept Review remains focused on concept-stage engineering decisions. It is intended to identify whether the technical direction is sufficiently sound to continue development, expose important uncertainties and risks, and establish what should be clarified, prototyped, tested, or developed next. Final scope, price, and estimated lead time are established before Phase Three begins.

GENERAL INTENT:

A Standard Concept Review evaluates the technical foundation of an early-stage product concept before the design becomes heavily developed or committed to a specific solution. The review considers the stated problem, intended function, user needs, major design assumptions, interfaces, expected operating conditions, preliminary material and process direction, and the information currently available to support development.

The purpose is not to finalize the product or perform detailed design engineering. It is to determine whether the concept is developing in a technically workable direction, identify important risks or unknowns that could affect later design decisions, and provide a practical path for moving forward. Particular emphasis is placed on identifying what should be defined, changed, prototyped, tested, or better understood before significant effort is invested in detailed CAD, engineering drawings, supplier involvement, or production planning.

SCOPE GENERALLY INCLUDES:

- Review of primary concept concern
- Basic concept-intent alignment review
- Early concept risk identification
- Basic material/process screening
- Prototype-readiness assessment
- Concept data clarity review
- Clear next-step recommendations
- Review of stated functional needs
- Basic fit/interface observations
- Key assumption identification
- Early manufacturability screening
- Prototype-method considerations
- Testing-direction recommendations
- Priority development actions

SCOPE MAY INCLUDE:

- Closer review of one key feature
- Comments on primary concept risk
- Early prototype path guidance
- Basic testing-direction guidance
- Review of alternate concept paths
- Preliminary material comparison
- Basic user-interface observations
- Comments on known prototype issues

SCOPE DOES NOT INCLUDE:

- Broad detailed-design review
- Full Design Review or DRR-level analysis
- Formal tolerance stack analysis
- Assembly-level review unless scoped
- CAD redesign or model changes
- Detailed prototype plan development
- Production-ready CAD development
- Engineering drawings from scratch
- Formal simulation or FEA analysis
- Detailed tooling or fixture design
- Full DFM or MAAR-level analysis
- Final product validation or approval

UNIVERSAL SCOPE LIMITS

Unless specifically stated in the ICAR or project-specific scope, no concept review includes:

- Full product redesign or engineering development
- CAD remodeling or engineering drawing creation
- FEA, CFD, simulation, or formal analysis
- Regulatory, safety, or compliance approval
- Validation, certification, or performance approval
- Prototype fabrication or physical testing
- Tooling, mold, die, or fixture design
- Supplier sourcing, qualification, or management
- Production launch or manufacturing ownership
- Guarantee of performance, cost, or production success

CONCEPT REVIEW PHASES OVERVIEW

The four-phase Concept Review system is used to keep the review controlled, transparent, and useful from intake through closeout.

PHASE ONE captures the submitted concept information, design intent, assumptions, supporting documentation, and project context needed to establish the review baseline.

PHASE TWO screens the submission, defines the review scope, identifies required missing information, and generates the ICAR with pricing and estimated lead time.

PHASE THREE executes the Concept Review and develops the CRR findings, technical observations, recommended actions, and next-step guidance.

PHASE FOUR delivers the CRR, closes the approved review scope, and defines what is included or excluded after delivery.

This structure keeps expectations clear, limits scope creep, and gives the client a defined path from initial concept submission through practical development direction.

PHASE ONE

DEFINE THE
CONCEPT

KEY ACTIONS:

Contact Information
Concept Information
Design Intent
Documentation Upload

OUTPUT:

COMPLETE CONCEPT
SUBMISSION PACKAGE

KEY
STAKEHOLDER:
YOU

PHASE TWO

BUILD THE
REVIEW PLAN

KEY ACTIONS:

Initial Screening
Concept Assessment
Scope Definition
ICAR Generation

OUTPUT:

INITIAL CONCEPT
ASSESSMENT REPORT

KEY
STAKEHOLDER:



PHASE THREE

EXECUTE THE
CONCEPT REVIEW

KEY ACTIONS:

Concept Alignment
Feasibility Review
Early Risk Assessment
CRR Development

OUTPUT:

CONCEPT REVIEW
REPORT

KEY
STAKEHOLDER:



PHASE FOUR

CRR DELIVERY
AND CLOSE-OUT

KEY ACTIONS:

CRR Delivery
Concept Findings
Next Steps
Review Closeout

OUTPUT:

COMPLETED TIER-1
CONCEPT REVIEW

KEY
STAKEHOLDER:



, YOU

ICAR DELIVERY

PAYMENT / ICAR APPROVAL

PHASE THREE INITIATED



ICAR LEGAL & KEY TERMINOLOGY

LEGAL

ICAR USE LIMITATIONS & CLIENT ACKNOWLEDGEMENT

This Initial Concept Assessment Report, or ICAR, is a preliminary intake and scoping document prepared by Tier-1 Engineer, LLC as part of the Tier-1 Design Readiness System.

The ICAR is intended to document the submitted concept, establish the current project condition, identify known requirements and key unknowns, summarize preliminary review needs, define the proposed Concept Review scope, and establish the price, estimated lead time, and next step required to initiate Phase Three technical review.

The ICAR is not the final technical review deliverable.

The ICAR does not constitute:

- Final concept approval
- Final design approval
- Production approval
- Tooling approval
- Supplier approval
- Regulatory approval
- Safety certification
- Licensed professional engineering certification
- Engineer of Record work
- A complete Design Review
- A complete DFM Audit or MAAR-level analysis
- Formal product validation or testing
- A guarantee of feasibility, performance, cost, timing, manufacturability, or production success

The ICAR is based only on the information, documentation, sketches, drawings, CAD data, images, prototypes, descriptions, assumptions, and project context submitted or otherwise made available to Tier-1 Engineer, LLC at the time of initial assessment.

Incomplete, inaccurate, outdated, missing, or misleading information may affect the proposed review scope, pricing, estimated lead time, preliminary assessment, and accuracy of any initial observations. Tier-1 Engineer, LLC may revise the proposed scope, pricing, estimated lead time, or required information if additional documentation, revised concepts, new requirements, prototype results, or expanded review requests are introduced after ICAR delivery.

Payment in full constitutes acknowledgement and approval of this ICAR, including the proposed Concept Review scope, pricing, estimated lead time, required missing information, and applicable Tier-1 Design Readiness System Terms & Conditions.

Phase Three technical review begins only after payment confirmation and receipt of any required missing information. The client remains solely responsible for final design decisions, prototype implementation, testing, validation, regulatory compliance, production approval, and implementation of any findings or recommendations provided by Tier-1 Engineer, LLC.

Use of this ICAR, approval of this ICAR, submission of payment, or continuation of the engagement constitutes acceptance of the applicable Tier-1 Design Readiness System Terms & Conditions.

This page defines the limits of the ICAR only. Full Terms & Conditions apply to all Tier-1 Design Readiness System services.



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KEY TERMINOLOGY

TERM	DEFINITION
Concept Data Clarity	The usability and clarity of the submitted concept information based on completeness, consistency, detail, and ability to understand the intended concept.
Client Acknowledgement	The client's acceptance of the proposed Concept Review scope, price, estimated lead time, required information, and ICAR limitations.
Concept / Design Intent	The stated purpose, function, use case, user needs, and constraints the proposed concept is intended to satisfy.
Concept Feasibility	A measure of the concept's technical feasibility and overall workability based on the information currently available, including how well the proposed design appears positioned to progress toward the level of definition required in later development stages.
Concept Review Scope	The approved boundary of what the Concept Review will evaluate and what is excluded from the engagement.
Concept Stage	The current point in concept development, such as product idea, sketch, early CAD, preliminary prototype, or developing concept.
Documentation Submitted	The files, sketches, drawings, CAD models, images, notes, prototypes, or other information provided for initial assessment.
Estimated Lead Time	The expected review window established after project scope, complexity, and information requirements are screened.
ICAR	The Initial Concept Assessment Report used to document the submitted concept, initial assessment, proposed scope, price, lead time, and required next steps.
Information Still Needed	Missing or unclear project information that must be provided before the Concept Review can begin or be completed properly.
Initial Concept Assessment	The front-end screening of the submitted concept before the paid technical Concept Review begins.
Key Unknowns	Important technical questions, assumptions, or requirements that have not yet been sufficiently defined or validated.
Phase Three	The technical Concept Review phase where Tier-1 Engineer performs the approved review and develops the CRR.
Preliminary Design Findings	Initial design-related concerns identified during screening that may warrant deeper evaluation during the Concept Review.
Preliminary Manufacturability Findings	Initial manufacturing-related concerns identified during screening that may warrant deeper evaluation during the Concept Review.
Prototype Readiness	A preliminary indication of whether the concept is sufficiently defined to support useful prototype development or testing.